APPLYING E-BUSINESS IN FAST MOVING CONSUMER GOODS (FMCG) WHOLESALE ENTERPRISES IN PALESTINE

تطبيق الأعمال الالكترونية لدى مشاريع بيع الجملة للسلع الاستهلاكية سريعة الحركة

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ABSTRACT

Applying E-Business in Fast Moving Consumer Goods (FMCG) Wholesale Enterprises in Palestine

The electronic business (e-business) includes activities, which besides the intensive use of information and especially internet technology, connect and 'digitalize' all business activities, from developments and production, to management and administration. E-business is more than just another way to sustain or improve existing business practices. This thesis investigates Applying E-Business in fast moving consumer goods (FMCG) wholesale enterprises in Palestine. It proposes an instrument to measure the strength of a company's organizational and Information and communication Technology (ICT) capabilities to make this transformation.

After defining e-business and explaining why an evolutionary aspect of moving to e-business is required, the dimensions of e-business are defined with respect to differences between traditional business, partial, or pure e-business. Also, a model for moving to e-business is illustrated. The e-business evolving model is divided into six stages and represents an evolutionary aspect of migrating to e-business.

The majority of the literature on the subject of e-business focuses on the definition of the components of e-business in this thesis e-business is composed of five elements: business intelligence, enterprise resource planning, customer relationship management, e-commerce, and supply chain management. It also focuses on methodology of applying e-business, on information systems strategies, to help companies be more effective in their sector or industry. There is very little literature that focuses on some fundamental issues: the Business-to-Business (B2B) market places and the disruptive organizational change that is needed to make a successful transformation.

There is a part of literature on the subject of organizational change. This thesis applies these principles in the context of applying e-business in FMCG wholesale enterprises in Palestine.

The capturing of the primary data was conducted through the researcher's personal experience, personal interviews and survey, which is a triangulation approach (quantitative and qualitative). The questionnaire was sent to a sample of 40 Palestinian companies selected from the directory of the Palestinian companies which were ranked according to their economic activities, geographical distribution, ICT infrastructure availability and which were most likely to be able to provide coverage of distribution in the West Bank.

Finally, the results of the research study on current practices in evolving e-business in the most successful FMCG wholesale enterprises in Palestine are given. In this research, some aspects of business process innovation and e-business usage have been investigated (general e-business issues with levels of e-business usage, key objectives of participating in e-business, alignment of business strategy with e-business initiatives, e-business impact on the organization and e-business special usage software). Companies in the sector use e-business mainly to improve their internal processes and procedures. The technologies most commonly used by small and large enterprises alike are e-mail, websites; these are followed, at a considerable distance in terms of diffusion, by EDI, data file exchange through email (though very few smaller businesses use these). The most advanced technologies, such as CRM, SCM systems, and Knowledge Management solutions, are still rare and are used only by larger enterprises. ERP systems are the most apparent to be the common factor shared by all companies surveyed.

ملـخص

تمثل الاعمال الالكترونية واحدا من موضوعات ما يعرف بالاقتصاد الرقمي Digital Economy حيث يقوم الاقتصاد الرقمي على حقيقتين :- التجارة الإلكترونية و تقنية المعلومات **Information Technology- IT** فتقنية المعلومات او صناعة المعلومات في عصر الحوسبة والاتصال هي التي خلقت الوجود الواقعي والحقيقي للتجارة الإلكترونية باعتبارها تعتمد على الحوسبة والاتصال ومختلف الوسائل التقنية للتنفيذ وادارة النشاط التجاري .

والتجارة الالكترونية (E-commerce) هي تنفيذ و إدارة الأنشطة التجارية المتعلقة بالبضاعة والخدمات بواسطة تحويل المعطيات عبر شبكة الإنترنت أو الأنظمة التقنية الشبيهة ، ويمتد المفهوم الشائع للتجارة الإلكترونية بشكل عام الى ثلاثة أنواع من الأنشطة :- الأول ، خدمات ربط او دخول الإنترنت وما تتضمنه خدمات الربط من خدمات ذات محتوى تقني ومثالها الواضح الخدمات المقدمة من مزودي خدمات الإنترنت Internet Services Providers - ISPs والثاني ، التسليم او التزويد التقني للخدمات . والثالث استعمال الإنترنت كواسطة او وسيلة لتوزيع الخدمات وتوزيع البضائع والخدمات المسلمة بطريقة غير تقنية (تسليم مادي عادي) وضمن هذا المفهوم يظهر الخلط بين الاعمال الالكترونية والتجارة الالكترونية واستغلال التقنية في انشطة التجارة التقليدية وهو ما سنعمد الى ايضاحه لاحقا. اما من حيث صور التجارة الالكترونية فيندرج في نطاقها العديد من الصور ابرزها واهمها من الاعمال للمستهلك Business-to-Consumer وتشمل التسوق على الخط online shopping من الاعمال الى الاعمال Business to Business تحقيق تكاملية عمليات التوريد للمنتجات واداء الخدمات ، حيث تشمل العلاقات التجارية بين جهات الاعمال.

يشيع لدى الكثيرين استخدام اصطلاح التجارة الإلكترونية **E-COMMARCE** رديفا لاصطلاح الأعمال الإلكترونية **E-BUSINESS** غير ان هذا خطأ شائع لا يراعي الفرق بينهما ، فالأعمال الالكترونية اوسع نطاقا واشمل من التجارة الالكترونية ، وتقوم الاعمال الإلكترونية على فكرة اتمتة الاداء في العلاقة بين اطارين من العمل ، وتمتد لسائر الانشطة الادارية والانتاجية والمالية والخدماتية ، ولا تتعلق فقط بعلاقة البائع او المورد بالزبون ، اذ تمتد لعلاقة المنشأة بوكلائها وموظفيها وعملائها ، كما تمتد الى انماط اداء العمل وتقييمه والرقابة عليه ، وضمن مفهوم الاعمال الالكترونية ، يوجد المصنع الالكتروني المؤتمت ، والبنك الالكتروني ، وشركة

التأمين الالكترونية ، والخدمات الحكومية المؤتمتة والتي تتطور مفاهيمها في الوقت الحاضر نحو مفهوم اكثر شمولا هو الحكومة الالكترونية واية منشأة قد تقيم شبكة (انترانت مثلا) لادارة اعمالها واداء موظفيها والربط بينهم . في حين ان التجارة الالكترونية نشاط تجاري وبشكل خاص تعاقدات البيع والشراء وطلب الخدمة وتلقيها بآليات تقنية وضمن بيئة تقنية.

وما سبقت الاشارة فان اشهر انماط التجارة الالكترونية تتمثل بطائفتين رئيستين ، الاولى :- من الاعمال الى الاعمال **(business-to-business) وتختصر في العديد من الابحاث بصورة (B2B) ، والثانية من الاعمال الى الزبون (business-to -consumer) ، وتختصر في العديد من الابحاث بصورة (B2C)** وهو المفهوم الدارج للتجارة الالكترونية لدى مستخدمي شبكة الانترنت ، والفرق بينهما كما يشير تعبيريهما يتمثل في طرفي العلاقة التعاقدية ، وفي محل وهدف التبادل الالكتروني ، فهي في بيئة الاعمال **(B2B)** علاقة بين اطارين من اطارات العمل التي تعتمد الشبكة وسيلة ادارة لنشاطها ووسيلة انجاز لعلاقاتها المرتبطة بالعمل ، وهدفها انجاز الاعمال وتحقيق متطلبات النشاط الذي تقوم به المنشأة ، اما في بيئة العلاقة مع الزبائن **(B2C)** فهي علاقة بين موقع يمارس التجارة الالكترونية وبين زبون (مشتر او طالب للخدمة) وهدفها تلبية طلبات ورغبات الزبون ومحتواها محصور بما يقدمه الموقع من منتجات معروضة للشراء او خدمات معروضة لجهة تقديمها للزبائن .

تناقش هذه الرسالة موضوع تطبيق الاعمال الالكترونية في الشركات العاملة في قطاع المنتجات الاستهلاكية والتي تشمل المأكولات والمشروبات ومنتجات التبغ . والسمة التي تميز هذه الشركات هي تغطيتها للسوق عن طريق التوزيع والبيع بالجملة للشركات العاملة الاخرى .

تطرح الرسالة الية لقياس قوة تواجد البنية التحتية للاتصالات والمعلوماتية في هذه الشركات وقابليتها للتحول للاعمال الالكترونية . بعد تعريف الاعمال الالكترونية والخوض في الاتجاهات المتعددة لها نشرح الفرق بين الاعمال العادية التقليدية والاعمال الالكترونية بما في ذلك التجارة الالكترونية . ويتم استعراض نموذج للتحول الى الاعمال الالكترونية .

معظم النقد الادبي يركز على تعريف الاعمال الالكترونية ومكوناتها من برامج المحاسبة والادارة الشاملة , ادارة علاقة الزبائن , ادارة سلسلة التوريد , ادارة المعرفة والتجارة الالكترونية . ثم نتطرق الى اسواق B2B وأثرها على نجاح المؤسسات ومستوى ادائها واخيرا نناقش ادارة التغيير , صحيح هذه المتغيرات تناقش ضمن مجال عملي لشركات تصنيع وتوزيع المنتجات الاستهلاكية .

تم جمع المعلومات الاساسية من خلال الخبرة العملية للباحث ومن خلال المقابلة الشخصية والاستبيان , وهذا الاسلوب في البحث هو كمي ونوعي , تم توزيع الاستبيان على 40 شركة فلسطينية تم اختيلرها حسب نشاطها التجاري وتوزيعها الجغرافي و البنية التحتية للمعلوماتية فيها , وتم تطبيق هذا البحث فقط على الشركات العاملة في الضفة الغربية فقط .

اخيرا تم استنباط النتائج حول افضل النشاطات الناتجة عن تبني الاعمال الالكترونية و الابداع العملي الناتج عن تنظيم وتطبيق العمال الالكترونية , من بعض النتائج الواضحة ان الشركات تعتمد الاعمال الالكترونية لتحسين ادائها الداخلي وذلك في الشركات الصغيرة والكبيرة على حد سواء , وتم بحث مدى انتشار التطبيقات المختلفة للاعمال الالكترونية في هذه الشركات .

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GLOSSARY

ASP: Application Service Providing. Services that enables the usage or software and applications over the internet or other networks.

B2B: Business to business. Commercial transactions between businesses conducted over IP (internet protocol) based networks or other computer-mediated networks.

B2C: Business to consumer. Commercial transactions between businesses and consumers conducted over IP (internet protocol) based networks or other computer-mediated networks.

B2G: Business to government. Commercial transactions between businesses and the public sector conducted over IP (internet protocol) based networks or other computer-mediated networks.

CRM: Customer Relationship Management. A net-based software that supports the finding, getting and retaining of customers.

EDI: Electronic Data Interchange. Data exchange in structure form (EDIFACT) between businesses.

E-Marketplace: A B2B Internet trading forum in which multiple buyers and sellers exchange goods and services within an industry group or geographic region

Extranet: A private, secure extension of the intranet running on Internet protocol that allows selected external users to access some parts of an organization's intranet

Internet: Relates to Internet Protocol based networks: www, extranet over the internet, EDI over the internet, internet-enabled mobile phones.

Intranet: An internal company network using Internet protocol to enable communications within an organization

KM: Knowledge management. A net-based software solution which aims to support organizations to generate value from their intellectual and knowledge-based assets by providing an infrastructure that allows to systematically aggregate and disseminate information and company internal knowledge.

LAN: Local Area Network. A local computer communication network that serves users within a restricted geographical area. LANs consist of servers, workstations, printers and communications hardware (e.g. routers, bridges, network cards) and a network operating system.

SCM: Supply Chain Management. An internet-based software solution that supports the management of logistics and inventory along the entire value chain and connects business partners.

WAN: Wide Area Network. A computer communication network that serves users within a wide geographic area, such as a region or country. WANs consist of servers, workstations, printers and communications hardware (e.g. routers, bridges, network cards), and a network operating system.

XML: (EXtensible Markup Language) An open standard for describing data from the W3C. It is used for defining data elements on a Web page and business-to-business documents.

ISDN: (Integrated Services Digital Network) an international standard for switched, digital dial-up telephone service for voice and data. Analog telephones and fax machines are used over ISDN lines, but their signals are converted into digital by the ISDN terminal adapter.

ANALOG MODEM: A common device that converts the computer's digital pulses to tones that can be carried over analog telephone lines

SME: Small and Medium-sized Enterprises or SMEs are companies whose headcount or turnover falls below certain limits.

1 INTRODUCTION

1.1 Overview

One of the many challenges facing the countries in the Middle East today is preparing their societies and governments for globalization and the information and communication revolution. Policy-makers, business executives, non governmental organizations (NGO) activists, academics, and ordinary citizens are increasingly concerned with the need to make their societies competitive in the emergent information economy. In the emerging global economy, e-business has increasingly become a necessary component of business strategy and a strong catalyst for economic development. The integration of information and communications technology (ICT) in business has revolutionized relationships within organizations and those between and among organizations and individuals. Specifically, the use of ICT in business has enhanced productivity, encouraged greater customer participation, and enabled mass customization, besides reducing costs.

In spite of the continuing overall difficult economic situation and market conditions for business innovation and investment, electronic business continues to show a potential development in Palestine and the region. New technological developments (wireless access technologies, for example) on the one hand, and the increasing competitive pressure on companies in a global economy on the other, resulting in a constant search for opportunities to cut costs, and finding new markets are the main drivers. Innovation in electronic business always implies new opportunities as well as challenges for enterprises.

Electronic technology is likely to have a dramatic effect on business, finance and commerce. Opinions vary as to whether the business industry will be able to take advantages of new significant opportunities resulting from these developments or whether it will have to struggle to maintain its current principal role in the economy. New global information links connect customers with their companies by a stroke of a key, the click of a mouse or even the touch of a screen. Ideas, designs, money transfers and orders now move in seconds instead of days or years. Hence, adopting such a technology in the business sector would reflect on the enterprises with regards to their operational efficiency. This can be implemented through using an electronic system that allows customers to perform business activities anywhere around the globe, seven days a week, twenty-four hours a day, via the Internet, Intranet, or Extranet, and this is what Electronic Business (E-Business) is all about.

E-business is composed of – but not limited to – five elements: business intelligence, enterprise resource planning, customer relationship management, e-commerce, and supply chain management. Thus, e-business is more than the actual order transaction. The main focus of e-business is instead on the information flow and the interaction between the actors in the supply chain (Strauss et al., 2003).

1.2 Scope of the study

The development in the Palestinian economy through out the current situation that the country is passing through has meant an increased focus on integration and cooperation between companies and target customers to insure a valid and long lasting beneficial relation. It can also be stated that this development has been enabled through an increased use of e-business and information and communication technology, ICT. From an FMCG wholesale business model perspective this has meant new possibilities and opportunities to increase the efficiency in strategically important operations and processes. It is the scope of this thesis to evaluate the possibilities of using e-business technology to make the FMCG Wholesale Enterprise more efficient and to find the benefits of implementing e-business in these enterprises.

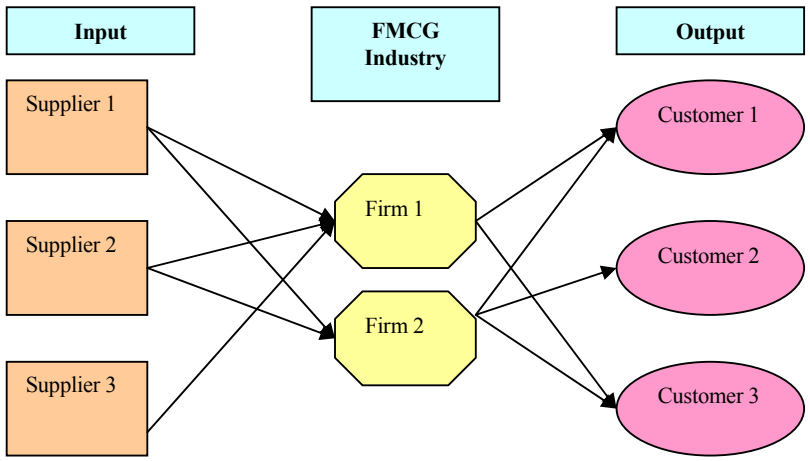
1.3 Units of Research

In order to provide a definition of e-business which is appropriate for the purposes of the present study, it seems helpful to refer to the study focus of the research. Aiming at sector data, the relevant units of research are industries as well as companies. It is essential to keep this focus on well defined units of research in order not to blur and confuse the picture by moving arbitrarily along the value chain. The following Figure provides an illustration of the sector/company location in the value chain.

Two types of units of research are taken in the course of the study: industries and companies or firms that are involved in wholesale. Some data is gathered at a company or establishment level and then aggregated into industry data. Some background information is gained from macro data that consider the economy as a whole, this is used to interpret micro- and sector data.

The firm type units of research in this project are FMCG Wholesale companies operating in Palestine. They engage in e-business relations with external suppliers on the input side and with customers on the output side. There are 120 FMCG wholesale enterprises working in Palestine, this is considered the whole population of this sector according to (PCBS economics surveys series, 1999). A sample of 40 FMCG wholesale enterprises will be selected randomly from the whole population of the FMCG sector. Geographical distribution will be key element of surveying this sample according to there location in the West Bank. Since Gaza is out of reach for the researcher due to the current political and occupational circumstances it will be excluded from the research sampling.

Figure 1-1: Scope of the Study.



Source: own.

Suppliers and customers usually belong to industries that are different from that of the unit of research, but they do not have to. Suppliers include all actors which contribute to the firm's output. This comprises business partners as well as providers of goods and services that do not directly deliver inputs into processes of production, such as tax consultants or caterers. Not all suppliers or customers conduct business electronically with the firm. In addition to external transactions involving suppliers or customers, there are internal transactions using electronic means

of communication (see e-business and e-commerce definitions). This means that the firm as a unit of research will be analyzed with regard to its market relations with external partners as well as with regard to internal flows of communication and procedures. (Most of the business studies approaches to e-business take a company perspective; the fundamental work on the structure, implementation and opportunities arising from e-business).

1.4 Justification of the Study

In most cases, e-business and e-commerce have focused on the fulfillment of customer orders and the distribution process. It was, and still is, believed that e-business and the increased connectivity of the Internet will give rise to new customer behavior and that this will have serious implications on the whole FMCG industry. This has been confirmed from various sources (e.g. Lancioni et al., 2000; Barua et al., 2001; Javalgi and Ramsey, 2001).

To provide a deeper understanding of how e-business affects business processes in FMCG Wholesale enterprises in the Palestinian market, the overall purpose of this study is to explore and analyze the potential of adopting and deploying e-business as a tool to manage the various activities and processes of a Palestinian FMCG Wholesale enterprise.

1.5 Statement of the Problem

Using internet and e-business is not just about running the company's current application on a web browser. It's about coordination, cooperation between the stakeholders, both internally, such as employees, and externally, such as suppliers and customers. It's about managing the company through highly integrated information. It's about dramatically increasing productivity and efficiency. In short, e-business shall enhance the efficiency and capacity of the enterprise.

From the researcher's experience as an electronics engineer, and an e-business implementer who worked as an MIS manager in several reputed enterprises in Palestine, he could sense the need for knowing many aspects that affect the implementation of E-business in many sectors in Palestine. Such kind of e-business related knowledge about the sector specific needs is not very well defined. There are so many definition drivers of applying e-business in a certain firm, since e-business will have a tremendous effect on the business itself as well as the economy as a whole. So we need to define the applicability of e-business in the FMCG sector as a whole in Palestine. Through defining the e-business infrastructure requirements vs. the sector needs

FMCG sector is a dynamic wide spreading business in Palestine; it is in a direct interaction with international and national suppliers. It has a pretty large customer base, and it contains so many details related to products, logistics, and operations as well, which are considered to be cost drivers. So in order to enable this sector to reap the fruits of the emerging technologies by adopting e-business, this shall have a direct impact on the Palestinian economy as a whole, the benefit of this sector as a leader and initiator, and the satisfaction of the customer as a target. Through this research we shall answer the following questions:

1. What are the Basic characteristics of the companies in the FMCG sector in Palestine?
2. What is the ICT infrastructure available in the FMCG companies?
3. Assessing employee Skills development in the FMCG companies which is in direct relation to e-business initiative.
4. Are there any B2B E-commerce activities? (i.e. online selling and participation in electronic marketplaces in the sector)
5. What are the barriers to selling online and to e-business in general?
6. What is the General impact of e-business on the organization and business processes?

7. Assessment of Organizational Change Capabilities for E-business Transformation

8. Applicability of E-business - Readiness of the enterprise to apply e-business

9. What are the critical factors affecting the success of application of a successful e-business in FMCG Wholesale enterprises in Palestine?

10. What are the major components of E-business needed to insure quality procedures and operations in the enterprise? (Usage of special e-business software)

11. How much are the companies willing to invest in e-business?

12. In what order should the E-business solution be applied and what are the priorities definition drivers?

The purpose of the thesis can be divided into four components:

- The first part of the research is to define the properties and components of the e-business suite required to operate the various processes of a FMCG Wholesale enterprise, its ability to change, and how it handles the specific demand of goods flow related to e-business.

- The second part is related to how FMCG Wholesale enterprises should implement e-business, the benefits and results thereof. It also looks into how the physical handling of goods within companies and what processes get affected by e-business.

- The third part has a supply chain perspective and looks at the possibilities of using e-business and B2B e-commerce to integrate Palestinian companies in the supply chain to make the logistical processes more efficient.

- The fourth and final part is the direct impact of e-business on managing change in the FMCG enterprises in Palestine.

1.6 Organization of the study:

After we have discussed some general topics about the FMCG sector in Palestine in the first chapter, we will go through some literature review in the second chapter. The definition of e-business and its different components; will be discussed and investigated further more. Several issues will be tackled like the dimensions of e-business and the stages of e-business adoption, in addition to the exploration of the different models to adopt e-business in terms of implementation. In the third chapter, the research methodology will be illustrated and explained in phases. The results and the representations of the outcomes of the survey will be illustrated in chapter four.

The conclusion and recommendations of the thesis will be listed in the fifth chapter in addition to a proposed model called HJOUJ model of implementation of e-business in FMCG companies in Palestine.

1.7 The Fast Moving Consumer Goods (FMCG) Industry in Palestine

(Food, beverages and tobacco products)

1.7.1 Economic profile

Consumers and technology are driving constant invention and innovation. In a world of increasing uncertainty, consumers are putting their trust in brands. Few sectors are closer to change than Fast Moving Consumer Goods (FMCG). Here, results are immediate. Ideas and strategies quickly translate into products on shelves, messages in the media, response from consumers, growth in the business. We have to be proactive in exploiting new channels of business, and harnessing the opportunities that e-business has to offer.

The FMCG sector that manufactures and trade food, beverages and tobacco products, is one of the most rapidly developing sectors in the Palestinian economy. The vitality of the sector's basic products as well as the recent developments in quality to meet international standards and requirements are both enhancing the sector in the local market and increasing the export capacities of local producers. Local market share increased from 25% in 1996 to 45% in 2000 - an increase of 20% in market share for local producers (Paltrade, 2004). This increase is an indicator of the development and growth of the FMCG industry in Palestine. Market studies reveal that the average family spends 42% - 45% of its income on food indicating the importance of this sector and the need for a competitive local industry to provide high quality FMCG products. The total investment in the industry is estimated at around $ 300 million (Paltrade, 2004). The sector consists of two major activities: the distribution of food, beverages products and the distribution of tobacco products. Food accounts for more than 80% of the total production value of the sector, whilst beverages represent about 11%. Tobacco represents about 6-7% of total volume (Paltrade, 2004).

The structure of FMCG industry shows a relatively small number of large companies on the one hand and a large number of small enterprises on the other. In general, over 80% of the enterprises operating in this sector are small companies (with less than 50 employees) (Paltrade, 2004). The following table illustrates the division groups and the activities of the FMCG industry in Palestine.

Table 1-1: illustrates the division groups and the activities of the FMCG industry in Palestine.

Division Group	Activity
1	Wholesale enterprises of food products, beverages products 1. Manufacturing & distribution of meat and meat products 2. Manufacturing & distribution of fish and fish products 3. Manufacturing & distribution of fruit and vegetables 4. Manufacturing & distribution of vegetable and animal oils and fats 5. Manufacturing & distribution of dairy products 6. Manufacturing & distribution of grain mill products, starches and starch products 7. Manufacturing & distribution of prepared animal feeds 8. Manufacturing & distribution of beverages 9. Manufacturing & distribution of Confectioneries 10. Manufacturing & distribution of other food products
2	Manufacturing & distribution of tobacco products

Source: (Paltrade, 2005).

1.7.2 Market Trends

The current and persistent market environment penalizes Small, Medium Enterprises (SMEs) and mandates few sophisticated suppliers with the ability to maintain the life cycle of the product, to support it with modern distribution, and to source from international suppliers of goods, which puts increasing pressure on the Palestinian FMCG Wholesale enterprises.

Currently, the increasing competition puts the least technologically developed companies in a weak position, in most cases SMEs. For example, food safety and quality assurance require the installation of new monitoring mechanisms that SMEs hardly can afford. Moreover, the increased use of computers, the Internet, and web technologies and applications require specific personnel skills and investments in network technologies. A relatively moderate proportion of SMEs are already aware of new developments, but fewer smaller enterprises exhibit a readiness to adopt. Coupled with structural inefficiencies (i.e. islands of operations) found in most Palestinian food industries, SMEs strive to respond by adapting their products and services, market strategies and partners. SMEs are likely to respond to such threats by:

- Developing their own brands
- Positioning their products to niche markets and
- Meeting market demand for organic produce on traditional farms.

ICT & e-business have provided a channel to support marketing and distribution of niche products. Furthermore, e-business improves communication with consumers, advances business operations, and enhances business relations profoundly.

1.8 Usage of ICT & e-business in Palestine

1.8.1 The Role of ICT and E-business

The role and use of ICT technologies mirrors the structure of the industry in Palestine that is the dominance by large Enterprises, where the creation of industrial groups (tied to mergers and subsidiaries) has encouraged the installation of interconnected local networks.

Sophisticated technologies and applications are less pervasive than in other industrial sectors, focusing mainly on intra-organizational processes and procedures. Core sector business areas are: supply, operations, logistics, services, and marketing & sales. Other critical areas now being targeted for improvement are: distribution processes, the control of quality in ISO, the quality of the product, and the reverse supply chain management of returned products.

E-business solutions focus predominately on the business interface and on integrating activities such as accounting, administration, and stock control. Large software houses have developed flexible ERP systems for many FMCG enterprises. It is mostly the larger FMCG Wholesale companies that deploy this software, though there are examples of bespoke (low-cost, low-complexity friendly interface) applications created by small in-house IT teams (often in medium & small-sized enterprises).

In the large multinationals, the role of ICT is evolving from mere instrumentation for reducing operation costs and it is becoming a growing support for strategic decisions and greater e-business interaction and models. However, the degree of diffusion of ICT within the Palestinian FMCG industry depends heavily upon the adoption behavior of SMEs which are the predominant institutional type.

Companies are under continuous pressure to optimize internal processes and to integrate them with those of customers and suppliers. Integration is stimulated through the optimization of partner relationships, especially with partners from the retail and distribution network. The strategic use of new ICT includes reducing operating costs and optimizing the principal processes of the FMCG chain, i.e. efficient replenishment of products and efficient store assortment, and developing more efficient promotion and efficient new product introduction.

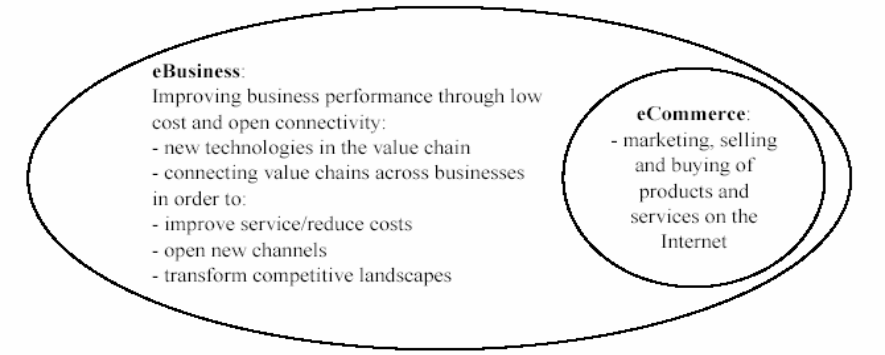
Tiers integration of suppliers to manufacturers and to the retail and distribution network could drive down costs; improve logistics and ultimately improve customer satisfaction. The actual extent of collaboration and integration by means of business to business (B2B) e-commerce is dependent on many factors. Although collaboration and integration between producers and suppliers of goods must be improved, it is evident that the diffusion of network technologies can only build on an average penetration rate of electronic data interchange (EDI) solutions.

Integration of upstream suppliers is inhibited by the dominance of traditional transaction and communication channels, where the "social factor" (personal contact with business partners, "handshake agreements", long-term partnerships) plays a very important role. Even so, there are efforts to achieve better integration by implementing Supply Chain Management (SCM) applications.

1.9 Electronic business

In comparison to eCommerce, Kalakota and Robinson (2000, p. 4) see electronic business in a broader scope. According to them, e-business, in addition to encompassing eCommerce, includes both front- and back-office applications. E-business is not just about eCommerce transactions; it's about redefining old business models, with the aid of technology, to maximize customer value (Kalakota and Robinson 2000, p. 4). The next figure illustrates these relations between eCommerce and e-business.

Figure 1-2: e-Business vs. e-Commerce.



Source: (Watsila, 2004)

Thus we define e-business as a company-wide concept to be used when discussing the company's general strategy. E-business comprises eCommerce that merely represents the marketing, selling and buying of products and services over the Internet. Hence, for example, the volumes of eCommerce are easy to obtain, as it is something measurable (transactions), whereas the use of e-business is considered to be more of a strategic decision and can therefore be seen as more intangible or immeasurable. However, the results and the benefits of the use of e-business (such as cost reductions, and improvements in service) should be very tangible indeed (Kalakota and Robinson, 2000).

2 LITERATURE REVIEW: E-BUSINESS

2.1 Introduction

As the year 2000 draws to a close, electronic business (e-business) continues to be a hot topic for the global economy. Technically it is rather easy to set up a website and start a Business-to-Consumer (B2C) Ecommerce facility. It is far more difficult tot get that facility properly integrated with back office systems and to achieve integration with Business-to Business (B2B) partners backwards in the supply chain. Integration between B2B partners also means interconnection of IT-systems. To achieve that, it is necessary to know how e-business should be applied so that appropriate performance quality is assured. That is what this thesis is about.

The majority of the literature on the subject of e-business focuses on the definition of the components of e-business, methodology of applying e-business, on information systems strategies, to help companies be more effective in their sector or industry. There is very little literature that focuses on some fundamental issues: the Business-to-Business (B2B) market places and the disruptive organizational change that is needed to make a successful transformation. There is a section of the literature on the subject or organizational change. This thesis applies these principles in the context of applying e-business in FMCG wholesale enterprises Palestine.

2.2 Defining E-Business

E-business is one of the key concepts in this thesis. Not only has e-business changed the ways that the public regard logistics and supply chain management, it has also meant a change in the way companies communicate and interact with their environment. Muffatto and Payaro state that:

> "*Electronic business is the process which uses Internet technology to simplify certain company processes, improve productivity and increase efficiency. It allows companies to easily communicate with their suppliers, buyers and customers, to integrate ''back-office'' systems with those used for transactions, to accurately transmit information and to carry out data analysis in order to increase their competitiveness*" (Muffatto and Payaro, 2003, p. 10)

It is also stated that the increased integration, achieved through e-business, helps members of supply chain networks to create new products, penetrate new markets and find new customer segments (Lee and Whang, 2001).

Before going further into the benefits and characteristics of e-business there is a need to make a distinction between what is meant by e-business and e-commerce. While some use e-commerce and e-business interchangeably, they are distinct concepts. In e-commerce, information and communications technology (ICT) is used in inter-business or inter-organizational transactions (transactions between and among firms/organizations) and in business-to-consumer transactions (transactions between firms/organizations and individuals).

Both e-business and e-commerce are used when analyzing the development in logistics and supply chain management caused by Internet technology. This mix of expressions often gives rise to certain confusion within the area. To differentiate between these two fundamentally different processes the definitions of both e-commerce and e-business will be discussed. In general e-commerce is used describing the electronic transaction; E-commerce is usually associated with

buying and selling over the Internet, or conducting any transaction involving the transfer of ownership or rights to use goods or services through a computer-mediated network. Whereas e-business is used describing the business model being enabled through the Internet and information technology, moreover, in e-business, ICT is used to enhance one's business. It includes any process that a business organization (either a for-profit, governmental or non-profit entity) conducts over a computer-mediated network. E-commerce can thus be viewed as a subset of e-business (Kotzab et al., 2003). From Simchi-Levi and Simchi-Levi (2000) the following definition is taken:

> "*E-business is a collection of business models and processes motivated by Internet technology, and focusing on improvement of extended enterprise performance.*" (Simchi-Levi and Simchi-Levi, 2000, p. 26)
>
> "*E-commerce is the ability to perform major commerce transactions electronically.*" (Simchi-Levi and Simchi-Levi, 2000, p. 30)

In general there are many definitions of both e-business and e-commerce depending on the situation and the purpose of the paper.

The interrelationship between e-commerce and e-business proposed by Simchi-Levi and Simchi-Levi (2000) can be stated to be generally accepted in literature. Similar representations can be found in, for example, Kalakota and Robinson (1999); Kotzab et al. (2003); and Strauss et al. (2003).

There is also an increased consensus of what is being included in the definition of e-business. A definition proposed by Strauss et al. (equation 1) defines the components of e-business using the most common concepts in logistics, customer relationship management and supply chain management. According to them fully optimized e-business is the sum of multiple e-business activities and processes: e-commerce, business intelligence, customer relations management,

supply chain management and enterprise resource planning. This is also represented in an equation proposed by Strauss et al. (2003) the components of the equation are further described in table 2-1:

Equation 2-1: the components of e-business (Source: Strauss et al., 2003).

$$EB = EC + BI + CRM + SCM + ERP$$

Table 2-1: The Components of E-business.

EB	e-Business – all electronic activities conducted by organizations as defined here
EC	e-Commerce – buying/selling on-line, digital value creation, virtual marketplaces and storefronts and distribution channel intermediaries
BI	Business intelligence – gathering primary and secondary information about markets, customers, competitors, etc.
CRM	Customer relationship management – holistic process of identifying, attracting, differentiating and retaining customers
SCM	Supply chain management – the, behind the scenes coordination, of the distribution channel to deliver products effectively and efficiently to customers
ERP	Enterprise resource planning – back-office applications such as order entry, purchasing, invoicing and inventory control. ERP systems allow companies to optimize business processes while lowering costs

Source: Strauss et al., (2003).

2.2.1 Electronic Commerce

Electronic commerce or e-commerce refers to a wide range of online business activities for products and services. It also pertains to any form of business transaction in which the parties interact electronically rather than by physical exchanges or direct physical contact. E-commerce can be defined as the technology enabling electronic interchange of data between two companies. Thus, e-commerce can be seen as a component of e-business where other ways of transferring data and conducting business can be included as well. Thus, ecommerce can be defined as the process of electronically buying and selling goods, services and information (Turban, 2002). Though, it should be noted that the narrow definition used in this thesis is not a predominant one.

In B2C it is the transaction itself that causes new demands on the logistics as customers in greater extent chose home delivery instead of buying the goods in a store. It also gives raise to new technological solutions as to how consumers will be able to search for and order products on global level.

2.2.2 Knowledge Management & Business Intelligence:

2.2.2.1 Knowledge Management

Knowledge management is difficult to describe, since there exists many different descriptions and definitions thereof (e.g. Wiig, 1993; Nonaka and Takeushi, 1995; and Davenport and Prusak, 1998). The fluid mix of concepts, technologies and approaches in knowledge management also contributes in making the whole area almost indefinable. Instead of attempting to define KM, we will describe the different elements constituting KM and how they, in different ways, contribute to improve the value-creating work in organizations. The motivation for this approach is that the aim of the thesis is not to define KM, but to describe different approaches on how to relate KM applications to the core business, i.e. to take the knowledge into action and thereby increase the competitiveness of organizations. The description will be based on the work conducted by Binney (2001), since his separation of the knowledge management spectrum into different elements is considered a necessity for being able to comprehend the area and the activities involved. Binney (2001) claims that the KM concept includes six distinct elements, each having a particular aim to fulfill, in order to allow organizations to cover the whole KM-spectrum. Along with the distinct elements, Binney (2001) exemplifies on different applications that may be included to support the activities in each element (table 2-2).

Table 2-2: KM applications mapped to the elements of the KM spectrum.

	Transactional	Analytical	Asset Management	Process	Developmental	Innovation & Creation
Knowledge Management Applications	▪ Case Base Reasoning ▪ Help Desk Applications ▪ Customer Service Applications ▪ Order Entry Applications ▪ Service Agent Support Applications	▪ Data warehousing ▪ Data mining ▪ Business intelligence ▪ Management information systems ▪ Decision support systems ▪ Customer relationship management ▪ Competitive intelligence	▪ Intellectual property ▪ Document management ▪ Knowledge valuation ▪ Knowledge repository ▪ Content management	▪ TQM ▪ Benchmarking ▪ Best practises ▪ Quality management ▪ Business process (Re) Engineering ▪ Process improvement ▪ Process automation ▪ Lessons learned ▪ methodology	▪ Skills development ▪ Staff competencies ▪ Learning reaching ▪ training	▪ Communities ▪ Collaboration ▪ Discussion forums ▪ Networking virtual teams ▪ Research & development ▪ Multi-disciplined teams.

Source: Binney, (2001, p. 35).

However, Table 2-2 only exemplifies on suitable applications for a particular element, and does not describe the core of the included elements. Therefore, the six elements (the column headings in Table 2-2) will be briefly described below with respect to their aim and role, as described by Binney (2001).

Transactional KM -- is focused on supporting the user in day-to-day tasks, such as completing a transaction or handling a customer query, by reusing already existing knowledge. Often, the application supports the user by supplying the user, which is confronted with a problem, with the solution of a similar problem. Through this support, the user is able to solve regular problems in less time and may therefore be able to handle more transactions or to increase the quality of the transactions handled (Connolly et al., 1999).

Analytical KM -- is focused on the creation of new knowledge. The core of analytical KM is the integration of large amounts of data and information, from both internal and external sources, which is then used to derive trends and patterns. Those trends and patterns are previously not known, due to the complexity of the sources and the diversity of data and information. Without the use of data integrating applications, the user should be forced to manually acquire and integrate the data, which is a time-consuming activity. In fact, the ability to automatically integrate data from various types of sources serves as one of the main motivations for data warehouses, since the users

may perform more value-added work, instead of performing costly and time-consuming integration work (Connolly et al., 1999).

Asset management KM concerns the processes associated with the management of knowledge assets. Asset management involves one of the following:

1. The management of codified explicit knowledge.
2. The management of intellectual property.

When these assets have been captured, they are made available to the users in the organization. Binney (2001) uses the analogy of a library, since the knowledge assets, just as the books in a library, are catalogued and made available to users. These knowledge assets are often bi-products to the ordinary business. This is an example of a KM activity type that is strongly related to the knowledge business, since it is a bi-product of the ordinary business. Still, by organizing the assets of the organization, it strongly contributes to decrease the time spent by users trying to find relevant documents or key competencies distributed throughout the organization.

Process-based KM -- covers, as the name implies, business processes. More specifically, this element is focused on the codification and improvement of processes and procedures and methodology. Furthermore, process-based KM activities often origin from total quality management (TQM) and process reengineering activities, since such activities are creating the base line for improving the effectiveness of the business processes.

Developmental KM -- focuses on increasing the competencies and capabilities of organizations knowledge workers. The KM element concerns both the transfer of explicit knowledge and the development of tacit knowledge. The explicit knowledge is transferred via training interventions whereas the tacit knowledge is developed through developmental interventions such as experimental assignments or membership in a certain community of interest. This KM element is becoming more and more important, especially since the investments spent on developing the knowledge and capabilities of a company's personnel, is a measure of the value of the organization. Further, according to Binney (2001), such investments also help to attract personnel in a highly competitive market. Examples of developmental KM applications are given in Table 2-2 and include; skills development, training and learning.

Innovation/Creation KM applications -- focus on the creation of a "learning" environment, in which the personnel of an organization or from different organizations can come together and exchange knowledge or create new knowledge. This KM element is the most popular in the whole KM spectrum and much literature is devoted to how to create this learning environment.

2.2.2.2 Business Intelligence

Business Intelligence can be described as tools and techniques for using available data to make decisions how to improve a company's performance and its competitive advantage in the marketplace. Business intelligence involves developing key performance indicators, (KPI); derive useful and relevant information from raw data and to use this information in operational and strategic decisions. Business intelligence systems are developed both on a stand-alone basis as well as being integrated in ERP and CRM systems. Handling of information and structure of data is one

of the most important constituents in e-business as it provides new possibilities for collecting information about the present and the past. (Block et. al. 1996).

In order to run a business effectively managers need insights in all kinds of aspects, such as inventory, costs, profits and return, staffing or performance. Organizations have been gathering a lot of data, but after recording it is generally less simple getting these data available for taking strategic and tactical decisions. Business Intelligence (BI) can offer a solution by making this information available. According to Whatis.com (2004):

> *"BI is a broad category of applications and technologies for gathering, storing, analyzing, and providing access to data to help enterprise users make better business decisions*." (Whatis.com, 2004)

The main objective of this section is to let the reader understand what the potential benefits of BI are. It focuses on the functional aspects of Business Intelligence from a business point of view. In the literature study Querying and Reporting is left out of the scope of this report.

The term Business Intelligence (BI) was in use as early as 1996, when a Gartner Group report said: By 2000, Information Democracy will emerge in forward-thinking enterprises, with Business Intelligence information and applications available broadly to employees, consultants, customers, suppliers, and the public. The key to thriving in a competitive marketplace is staying ahead of the competition. Making sound business decisions based on accurate and current information takes more than intuition. Data analysis, reporting, and query tools can help business users wade through a sea of data to synthesize valuable information from it - today these tools collectively fall into a category called "Business Intelligence." (Block et. al. 1996)

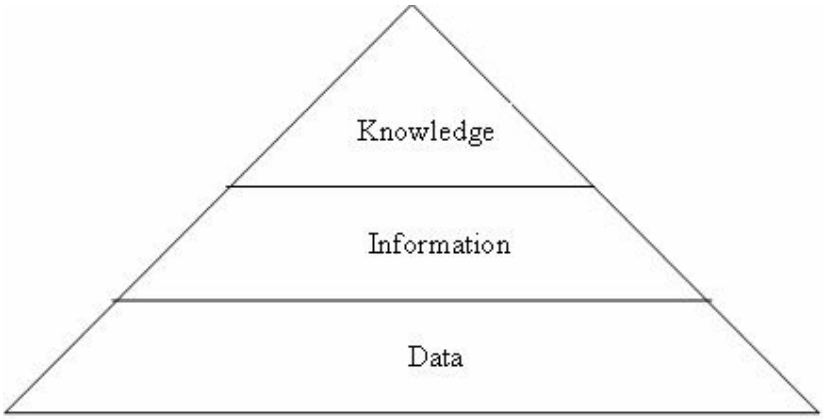
The Oracle corporate website describes BI as follows:

> *…an umbrella term for a set of tools and applications that allow corporate decision makers to gather, organize, analyze, distribute, and act on critical business information with the goal of helping companies make faster, better,*

> *and more-informed business decisions. Successful BI systems provide an integrated view of business, extend analytical capabilities to users, and leverage a corporation's data and expertise—wherever that data and expertise reside in a distributed enterprise.* (Gill, 2004)

There is no consensus in the literature on the definitions of data, information and knowledge and how they relate, let alone "wisdom". One way of looking at how these concepts may relate is as building blocks, with data being the most common, and the least valuable of the three as shown in figure 2-1.

Figure 2-1: Flow of Data through Knowledge.



Source: Davenport & Prusak (1998).

2.2.2.2.1 Data-to-Information

According to Davenport & Prusak (1998), data can be transformed into information by being:

- Contextualized
- Categorized
- Calculated
- Corrected and/or
- Condensed.

They quote Peter Drucker's defining information as "data endowed with relevance and purpose," and go on to say "Information is meant to shape the person who gets it, to make some difference in his outlook or insight." Davenport & Prusak (1998, p.3). In other words, when the data are organized and put in context, it must be done with considerable thought. Not only must a purpose be defined, but also the information builder must understand the business, the needs, and the culture or style of the persons who might access the information.

2.2.2.2.2 Information-To-Knowledge

Davenport & Prusak (1998) list the following activities as important for information to be transformed into knowledge:

- Comparison
- Consequences
- Connections
- Conversation.

It is also important to note that comparison, connections and conversation are, by nature interdisciplinary. In fact, Davenport & Prusak (1998) state that the staff members who are the most effective knowledge seekers, virtually always have to cross boundaries and ignore formal channels to get what they need. Dialogue and business intelligence tools are both vehicles for encouraging the transformation of information into knowledge, and ultimately into wisdom.

2.2.2.2.3 From Data to Knowledge, And Knowledge to Wisdom

This cluster of concepts could be expanded vertically, where it might include understanding, wisdom and application. What this might mean for your organization can be seen in Figure 2-1 as a hierarchical set of quotes that illuminates and expands upon the traditional hierarchy, illustrated earlier, with active statements (Davenport & Prusak, 1998).

We may speculate on what is required to transform our organization's knowledge into corporate wisdom. The characteristics will include activities like:

- Validation of core values
- Sustainable resource consumption
- Recognition of acceptable risks
- Crossing traditional boundaries for dramatic advancement.

2.2.2.2.4 Application Areas

According to Davenport & Prusak (1998) the application areas of BI are as follows:

1. Industries that are known to use BI are data rich industries, such as:
    - Consumer goods
    - Retailing industry
    - Financial services
    - Transport
2. Departments that are known to benefit most from BI are:
    - (Database) Marketing
    - Sales

- Finance
- IT(especially the Web) and the
- Higher Management

3. End-users:
    - All types of end-users can use BI tools.
    - End-users with different levels of expertise can apply BI applications to different levels of knowledge.
    - With BI-tools it is possible to carry out analyses and reports on virtually all thinkable aspects of the underlying business, as long as the data about this business come in large amounts and are stored in a data warehouse.

2.2.3 Customer Relationship Management

Customer relationship management, The CRM element referred to in e-business is the possibility of customizing the Internet interface to fit the need of each individual customer. As most e-business solutions exclude personal communication it is important to include the customer and the relation to the customer defining the role of e-business. At the core, CRM is an integration of technologies and business processes used to satisfy the needs of a customer during any given interaction. More specifically, CRM involves acquisition, analysis and use of knowledge about customers in order to sell more goods or services and to do it more efficiently. It is important to note that the term "customer'' may have a very broad definition that includes vendors, channel partners or virtually any group or individual that requires information from the organization. In IT terms, CRM means an enterprise wide integration of technologies working together such as data warehouse, Web site, intranet/extranet, phone support system, accounting, sales, marketing and production. CRM has many similarities with enterprise resource planning (ERP) where ERP can be

considered back-office integration and CRM as front-office integration. A notable difference between ERP and CRM is that ERP can be implemented without CRM. However, CRM usually requires access to the back office data that often happens through ERP-type integration (Brown, 2000).

According to Brown (2000) CRM is an approach where customers recognized as the core of the business, and that the success of a company depends on effectively managing the relationship to the customers. As in the case of business intelligence CRM means collecting data from every interaction that every customer makes with a company and to use this information for the purpose of providing the customer better service, support or to increase the sales to this customer. This increased customer focus identified in both logistics and supply chain management literature, is perhaps one of the most distinct developments that currently can be found in industry. The customers gain 24-hour accessibility and the vendor, or manufacturer, gets information that strengthens its position against competitors.

CRM principally revolves around marketing (Kotler, 1997) and begins with a deep analysis of consumer behavior. It uses IT to gather data, which can then be used to develop information required to create a more personal interaction with the customer. In the long-term, it produces a method of continuous analysis and refinement in order to enhance customers' lifetime value with the firm. Wells et al. (1999) noted, "Both [marketing and IT] need to work together with a high level of coordination to produce a seamless process of interaction" (p. 4). However, in order to work effectively with marketing, IT managers need an understanding of the fundamental marketing motivations driving the CRM trend.

CRM technology applications link front office (e.g. sales, marketing and customer service) and back office (e.g. financial, operations, logistics and human resources) functions with the

company's customer "touch points" (Fickel, 1999). A company's touch points can include the Internet, e-mail, sales, direct mail, telemarketing operations, call centers, advertising, fax, pagers, stores, and kiosks. Often, these touch points are controlled by separate information systems. CRM integrates touch points around a common view of the customer (Eckerson and Watson, 2000).

In some organizations, CRM is simply a technology solution that extends separate databases and sales force automation tools to bridge sales and marketing functions in order to improve targeting efforts. Other organizations consider CRM as a tool specifically designed for one-to-one (Peppers and Rogers, 1999) customer communications, a sole responsibility of sales/service, call centers, or marketing departments. We believe that CRM is not merely technology applications for marketing, sales and service, but rather, when fully and successfully implemented, a cross-functional, customer-driven, technology-integrated business process management strategy that maximizes relationships and encompasses the entire organization (Goldenberg, 2000). A CRM business strategy leverages marketing, operations, sales, customer service, human resources, R&D and finance, as well as information technology and the Internet to maximize profitability of customer interactions. For customers, CRM offers customization, simplicity, and convenience for completing transactions, regardless of the channel used for interaction (Gulati and Garino, 2000).

CRM initiatives have resulted in increased competitiveness for many companies as witnessed by higher revenues and lower operational costs. Managing customer relationships effectively and efficiently boosts customer satisfaction and retention rates (Levine, 1993; Jackson, 1994; Reichheld, 1996a, b). CRM applications help organizations assess customer loyalty and profitability on measures such as repeat purchases, dollars spent, and longevity. CRM applications help answer questions such as "What products or services are important to our customers? How should we communicate with our customers? What are my customer's favorite colors or what is

my customer's size?" In particular, customers benefit from the belief that they are saving time and money as well as receiving better information and special treatment (Kassanoff, 2000). Furthermore, regardless of the channel or method used to contact the company, whether it is the Internet, call centers, sales representatives, or resellers, customers receive the same consistent and efficient service (Creighton, 2000). A brief overview of some of the benefits that CRM offers by sharing customer data throughout the organization and implementing innovative technology is listed below:

- Superior levels of customer service
- Opportunities for cross-selling and up-selling
- Vast information about customers' habits and preferences
- Integrated and complete view of the customer
- Improved targeting to segments and individual customers
- Efficient call centers/service centers. (Creighton, 2000).

2.2.3.1 CRM innovative technology:

- Extends capability to the customer for self-service and Internet applications
- Attracts existing and new customers through personalized communications and improved targeting
- Integrates customer and supplier relationships
- Constructs metrics to analyze common and unique customer patterns. (Creighton, 2000).

2.2.3.2 CRM life cycle

CRM comprises three phases: acquiring, enhancing, and retaining. Each phase supports increased intimacy and understanding between a company and its customers. Theses three phases are:

1. Acquiring new customers: the company acquires customers by promoting product and service leadership.
2. Enhancing the profitability of existing customers: the company enhances the relationship by encouraging excellence in cross selling and up selling, thereby deepening and broadening the relationship.
3. Retaining profitable customers for life: Retention focuses on service adaptability-delivering not what the market wants but what customers want. (Kalakota et al 2000, P175)

Each phase impacts customer relationships in different ways so that focus and strategies vary from phase to phase.

2.2.4 Supply Chain Management

There are various definitions about supply chain management. SCM strives to balance conflicting activities such as promotion, sales, distribution and production. SCM might be seen as a business philosophy that strives to integrate the dependent activities between firms, e.g. logistics, purchasing, production, and marketing.

According to the Council of Logistics Management (2004) logistics is defines as: Logistics is that part of the supply chain process that plans, implements, and controls the efficient, effective flow and storage of goods, services, and related information from the point of-origin to the point-

of-consumption in order to meet customers' requirements and needs with accordance to their preference. This definition implies that logistics is a sub-set of SCM.

Supply chain management is a major issue in many industries as firms realize the importance of creating an integrated relationship with their suppliers and customers. Managing the supply chain has become a way of improving competitiveness by reducing uncertainty and enhancing customer service. The role of planning and coordination in complex integrated systems and information technology to synchronize the supply chain is described in a framework that creates the appropriate structure and installs proper controls in the enterprise and other constituents in the chain.

It is a common opinion in logistics that the integration of companies and logistics functions in supply chains is becoming increasingly important, (Lambert et al., 1998; Cooper et al., 1997; Alvarado and Kotzab, 2001). It is also pointed out that the focus of the company itself no longer is sufficient, and that the network of a company plays an increasingly important role (Aitken, 1998). Supply chain management emphasizes the relation to the suppliers and the customers referring to the supply chain as one unit. From Christopher (1998) it is stated that supply chain management is:

> *"The management of upstream and downstream relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole."* (Christopher, 1998, p.55)

Christopher also emphasizes the focus on relationships and value and the fact that one company may have to be subsumed in order to receive more profitable outcome for the supply chain. It is also stated that the term supply chain often refers to a network of suppliers and customers. According to an extensive literature study on supply chain management by Mentzer et al. (2001) there are seven main activities included in the SCM framework:

- Integrated behavior
- Mutually sharing information
- Mutually sharing risks and rewards
- Cooperation
- The same goal and the same focus on customer service
- Integration of processes; and finally
- Partners to build and maintain long-term relationships

It can be concluded that e-business, in many ways, prerequisites the holistic thinking of supply chain management. In e-business it is not sufficient to look within the borders of the focal company, instead visibility and information sharing are required across the supply chain. Therefore the integration approach of supply chain management is required in e-business in order to benefit from.

During the past few years, supply chain excellence, optimization, and integration have become the focus and goal of many organizations worldwide. Strengthening the supply chain management is perceived by many firms as the way to enhancing customer satisfaction and enabling profitable growth (AMR, 1995).

2.2.5 Enterprise Resource Planning

Enterprise resource planning (ERP), Is the information infrastructure in a company equivalent to the physical infrastructure in society? Therefore, the function of ERP systems has to be included as the connection between the e-business application and the internal processes of the company, i.e. manufacturing and production, finance, human relations, etc.

If e-commerce is the way to communicate and Business intelligence and CRM are ways to gather and use information, ERP is the backbone of e-business. Including the function of ERP systems provide an information infrastructure in which all data is being stored including financial information, production planning and manufacturing data (Kalakota and Robinson, 1999).

The concept of enterprise resource planning has been around for some 25 years. Including material requirements planning (MRP), capacity planning and eventually MRP II systems, these systems became increasingly competent. Areas like product design, information warehousing, materials planning, capacity planning, communication systems, human resources, finance, and project management could now be included in the plan (Umble et al., 2003). This is also why ERP systems today can be seen as combinations of different systems and functionalities rather than one separate system (Kalakota and Robinson, 1999).

In the mid 1990s many companies replaced their old information systems due to the turn of the millennium often called “the Y2K issue”, which increased the interest in the area (Mabert et al., 2001). As a consequence of the growing practical interest, researchers also started to take an interest which has increased the number of scientific articles on and approaches to the area. It is also an area with many things in common with e-business. Historically, ERP systems have facilitated intra-organizational communication, i.e. integration of internal processes such as sales, production and materials management (Edwards et al., 2001). As these systems have proved to be

increasingly potent, they now also support inter-organizational communication and collaboration. ERP and many other information systems of today are adapted to the Internet and their functionality keeps increasing (Jacobs and Bendoly, 2003; Rutner et al., 2003). A consequence of this is that these systems enhance the potential of integrated supply chains even in less strategically important or complex relationships. Modern information and communication technology provides the means to broaden the available solution space (Christiaanse and Kumar, 2000).

E-business, compared to the limited scope of e-commerce, thus involves information handling and analysis, customer relations, supply chain management (coordination and integration) and ERP systems thinking. From a logistics perspective this means that the consequences of e-commerce and the electronic activities leading to a transaction are important but restricted in terms of actions to be taken. The differentiation between e-business and e-commerce is in many ways a controversial issue. As can be seen in the discussion above, there is still some confusion about what to include in the two concepts. The definition of Strauss et al. (2003) is hardly the most common one. It is, however, a definition that incorporates the development within the corporate information systems area.

Supply chain management, customer relations, ERP systems integration and business intelligence have all become important elements in logistics and business management. Supply chain management provides the supply chain thinking and the integrated approach to e-business, i.e. connecting the supply chain through intelligent information handling. Whereas SCM perhaps is the most important prerequisite for this approach to e-business, business intelligence is what is significant for the way of handling information associated with e-business. Through business intelligence and data mining it is possible to use the gathered information in an efficient way combined with other information systems such as ERP systems.

The main reason for this division of e-business into components is mainly to show that e-business is more than a way of making business transactions. Especially when e-business processes are to be used as means for creating efficient logistics solutions; factors outside the transaction, integration of functions, processes and information systems becomes an important part of the process.

2.3 Characteristics of E-business

If the ERP system is the information infrastructure of a company providing the tools for integrating the different information systems; e-business information systems can be characterized in similar terms. According to Pant and Ravichandran e-business information systems are:

> *"…computer applications that use the Internet technology, its universal connectivity and the capabilities of the Web browser to integrate business processes within and beyond an enterprise."* (Pant and Ravichandran, 2001, p. 90)

In their definition Internet technology is emphasized. It is important to note that integration is being mentioned as the main purpose here.

In this research e-business is considered from a general perspective. E-business is viewed as a tool for enabling efficient information and communication between the actors of a supply chain including customers as well as the supplier and the suppliers' suppliers. E-business also gives rise to new information solutions and business models. Having the information technology upon which e-business is based in focus enables a different perspective and outcome when using ERP as a framework for analyzing the possibilities for and requirement of e-business in FMCG industry. It is also interesting to notice that the authors use collaboration as many of the purchases made on-line are occasional. In this case they refer to technical integration as a standard for data integration. It is important to note the difference between e-business and e-commerce. Whereas e-

business, as discussed previously in this research, is the business models and tools that enable efficient use of information and communication technology in the supply chain, e-commerce is based on the ability to perform major commerce transactions electronically (Simchi-Levi and Simchi-Levi, 2000). E-commerce is, albeit important, thus a part of e-business (Strauss et al., 2003).

From Golicic et al. (2002) it can be stated that there are two primary dimensions that can be used to describe the e-commerce environment: speed and connectivity. Speed has an impact on the structure of the market by inducing companies to bypass intermediate steps in the supply chain in order to conduct business faster, thus creating new business models (Kalakota and Robinson, 1999, Lee and Whang, 2001). This means that the Internet allows communication and sharing of information providing visibility across the supply chain, visibility through connectivity (Golicic et al., 2002). Connectivity also contributes to new market structures in the way that it provides access to new customers. Thus, e-commerce means that all companies have the same possibilities and will be influenced by this rapid and complex environment.

In e-business literature it is common to divide e-business applications into a number of categories. Based on Senn (1996) the main applications of e-business can be divided into three main categories:

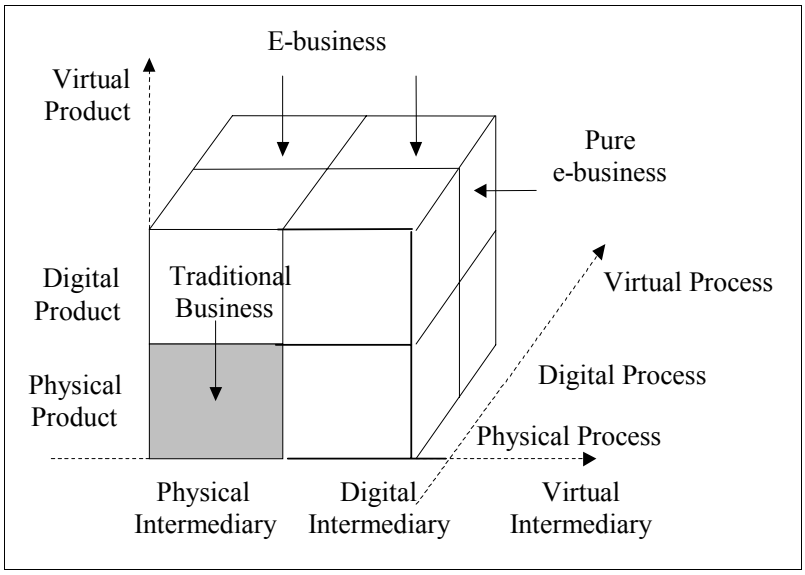
- Electronic markets or e-marketplaces: buying and selling goods and services (Delfmann et al., 2002; Grieger, 2003; Skjoett-Larsen et al., 2003)
- Inter-organizational systems: facilitating inter- and intra-organizational flow of goods, services, information, communication, and collaboration (Phan, 2003; Au and Ho, 2002).
- Customer service: providing customer service, help, handling complaints, tracking orders etc. (Singh, 2002; Orremo and Persson, 2003)

In short, this means that there are three basic categories application into which e-business can be divided: Marketing and coordination of sales, Facilitation of inter-and intra-organizational processes: and Customer service. Under each of these applications a number of logistical functions can be arranged. Other categorizations are also possible depending on the characteristics of the logistical function.

2.4 The Dimensions of E-Business

Depending on the degree of digitalization of the product (service), the process and the intermediary, e-business may take many forms or dimensions. As illustrated in Figure 2-2, these variables (products-services, process and intermediary) can vary from physical to digital or virtually making eight cubes, each of which has three dimensions. Choi et al. (2000) created a model that explains the possible configurations of all these dimensions. According to the model, in traditional commerce, all of the three dimensions are physical, while if there is only one digital dimension, it is considered as e-business (but not a pure one). In pure e-business all three variables - products/services, processes and intermediaries are digital, or rather, virtual.

Figure 2-2: The dimensions of e-business.



Source: (Choi, 1997, p. 35).

2.5 Benefits of E-Business

The function of e-business is increasingly accepted as a way to integrate and connect systems and processes (Lee and Whang, 2001; Rodgers et al., 2002; Muffatto and Payaro, 2003). From this integration many benefits are being generated; Rodgers et al. state that:

> *"The most important function of e-business is its interconnectivity and system interaction. As a result of the automation, many human functions are eliminated from various processes such as unnecessary key input, intervention, and internal reprocessing of electronic business information. Efficiency improvement resulting from faster processing and reduced errors is then realized in routine data processes and business interaction. E-business allows service providers to interact with their suppliers and customers."* (Rodgers et al., 2002, p. 186).

A concept enabled through e-business and information technology is the concept of the extended enterprise. The basic idea behind this integrated system approach is that it allows companies to benefit from reduced warehouse stock/inventory, cost reduction, an increased added-value of goods and services for the end customer and closer relationships with partners (Muffatto and Payaro, 2003). The concept of the extended enterprise is not new but with modern information

technology it becomes feasible as organizations can share information in ways that was not possible before. From the perspective of the extended enterprise, e-business as a function has great importance (Browne and Zhang, 1999).

Based on the discussion on supply chain management and integrated logistics, it can be stated that by integrating e-business an organization also has a tool for efficient supply chain management. Thereby, the company also has the possibility to improve its logistical processes if it can benefit from an extended enterprise concept. Integration is also recognized as one of the key processes of supply chain management integrating the key business processes across the supply chain and sharing information between the partners (Croxton et al., 2001; Mentzer et al., 2001).

Edwards et al. (2001) use a three level framework for describing the concept of the extended enterprise. In this framework companies can be divided into three levels depending on how they are organized and how they interact with their environment. The lowest level is the role of the traditional company, at arm's length relationship towards suppliers and customers. The second level of integration in the supply chain is the cooperative enterprise where information sharing occurs between the supply chain partners. On this level integrated information systems are becoming more common on an internal level, EDI being an increasingly important tool for communication towards suppliers and customers. The third and final level of integration is where the company becomes an extended enterprise, i.e. as the collaborative efforts of the company become a way to achieve flexibility as one of the performance goals. It is on this level where the enterprise, according to Edwards et al. (2001), for the first time takes advantage of the Internet-enabled technologies focusing on integrating the supply chain. Therefore it is considered important, evaluating and analyzing the effects and implications of e-business, to acknowledge the role of integration in supply chains and its influence on logistics and supply chain management.

The extended enterprise concept and integrated supply management does here represent state-of-the-art e-business (Kotzab et al., 2003). This means that business represents something more than just a traditional business model. In this way e-business information systems become strategic assets, enabling new business models (Pant and Ravichandran, 2001).

Pant and Ravichandran (2001) provided the following advantages of e-business:

- The basis of business decision making shifts from guessing to knowing.
- The value proposition offered to customers shifts from a mismatch (great or small) to a perfect fit.
- Information flow within the company shifts from lag time to real time.
- The customer service model shifts from supplier service to customer self-service.
- The use of employees' time shifts from predominantly low-value-added work to maximum talent leverage.
- Organizational processes shift from a focus on fixing errors to preventing them.
- Organizational productivity growth pattern shifts from a norm of ten percent improvement to 10X productivity improvement.
- Organization shifts from a collection of separate silos to an integrated system in which information, ideas, and solutions are shared.
- Provide a single standardized source of accurate data on trading items, location of product and services and new products.
- Eliminating outdated and errors product information and thereby increase industry savings from such costs.
- Facilitate trading partners to get product information in real time
- Provides a centrally maintained daily updated item master data for FMCG goods for all trading partners.

- Facilitate error free commerce transactions.
- Reduce unnecessary costs relating to errors arising from wrong item ordered/delivered, inaccurate purchase order, and error invoices etc.
- Reduce out of stock that lead to lost sales to both vendors and retailers as a result of inaccurate item master data.
- Provide a solution to identify "unknown items" and thereby reduce costs to identify such products
- Offers access to product image, product dimensions for shelf space management
- Offers opportunities for local importer to source for overseas product by browsing through at overseas electronic product catalogues.
- Facilitate e-business practice which will reduce cost and improve competitiveness and productivity

The important shift is how these benefits help the enterprise enhance several core processes in the organization; enhanced Production processes, which include procurement, ordering and replenishment of stocks; processing of payments; electronic links with suppliers; and production control processes, among others. The organization shall become more customer focused which include processes like promotional and marketing efforts, selling over the Internet, processing of customers' purchase orders and payments, and customer support, among others (Pant and Ravichandran, 2001).

Moreover, enhanced internal management processes Electronic applications internal information-sharing which enhances information flow between production and sales forces to improve sales force productivity. Workgroup communications and electronic publishing of internal business information are likewise made more efficient which would lead to a more talent focused, and profit focused organizational behavior. The researchers believe that the net effect of these benefits is multiplicative, not additive (Pant and Ravichandran, 2001).

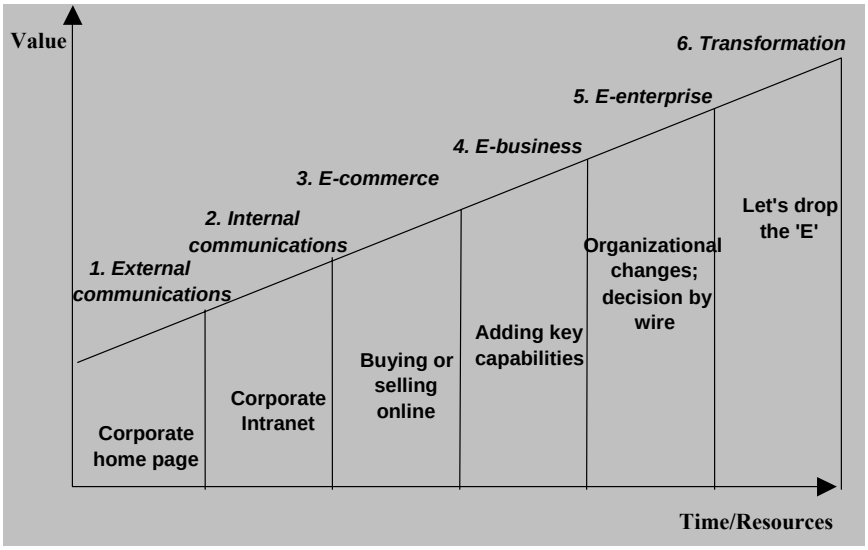
2.6 Stages in E-Business Adoption

Engaging in e-business for some companies means adopting a different and fresh web-enabled business model and making significant efforts about the business strategy as it does about technology. Despite Internet commerce or e-business growth, potential, and future projections of optimism, the real changes are happening inside the corporations where executives are redefining strategy, organization and business models for the Internet business era.

The new business era inaugurates the Internet as a business backbone and a platform for conducting transactions and economic activities. The Internet technology revolution affects all business activities and, by all means, is well beyond the information technology revolution. As illustrated in Figure 2-3, the e-business evolving model is divided into six stages (Choi, 2000):

1. External communications
2. Internal communications
3. E-commerce
4. E-business
5. E-enterprise
6. Transformation

Figure 2-3: Model of evolving the e-business



Source: (Choi, 2000, p. 36)

Given the model for evolving to e-business, we stand on the point that the process of moving to e-business is an evolutionary rather than revolutionary process.

2.6.1 Stage 1: External Communication

The initial stage in evolving e-business focused on the Internet's communication perspective. Corporations, especially global ones, realized that the Internet was a very effective communicating medium, or rather a communications channel to the external environment; mainly to investors, analysts, customers, partners, potential recruits, etc. Therefore, a narrow focus of Internet usage in this initial stage was corporate public relations because it was evident that software and technology behind the World Wide Web provided an interesting tool for publishing corporate public relations material. A common vision for developing a corporate web site was that every modern company needed to have a web site and informative web pages. In the initial stage, there was no vision of any kind of e-business, or doing business electronically because the public network was found as a proper medium for promotional purposes.

Very often, a motive for developing a web site was ‘we'll become a modern company’, with the initiative coming from IT-literate employees (not necessarily from the IT department, but rather from the marketing department, which was expected regarding the content and public relations or promotional purposes). However, it appeared that developing a web site and publishing fresh corporate materials on it were not as trivial as it seemed. In many cases, they were informal and spontaneous projects with no solid basis, organization and concrete tasks. Soon, the first questions would arise (Choi, 2000): who is responsible for keeping the content fresh and updated? Who approved the site and the way the corporate logo was presented? Who should really own the site?

From today’s perspective, this initial stage resulted in a ‘brochure ware’ of the company. Although brochure ware may imply static content, there were some levels of interactivity, mainly through the possibility of e-mail communication, frequently asked questions (FAQ) and some entertainment content. In this initial stage, the critical factor was the quality of content, thus corporate web sites often contained annual financial statements, annual reports, recent press material, overview of company's products, services, vision, mission, information how to contact the company and its employees, job vacancies and recruitment information, etc. Despite the fact that advanced companies already ‘jumped in e-business’, for the majority of companies, a major difficulty in this stage arises from the necessity to constantly update web site content.

2.6.2 Stage 2: Internal Communication

In short, the main characteristic of the second stage (from 1996 to 1998) was that IT professionals took control over the web site development and management. Although they recognized the potential of new technology, they saw them more as a technology solution than as a business opportunity. Nevertheless, the intranet solution has developed in this stage, with a primal objective to promote internal communication channels and make the internal communication effective. The Intranet has raised the information and communication capacity of organizations mainly through consistent and user-friendly front ends, e-mail, groupware and administrative support systems, bulletin boards, discussion or forum pages and knowledge-based materials for the whole corporation. Security aroused as an important issue, which led to intranets being segregated from extranets and from the Internet by 'firewalls'. Thus, in the second stage, the focus was to use Internet (or rather intranet) technology as organizational glue, but as well as to prepare the corporation for the next stage – going into e-commerce (Choi, 2000).

2.6.3 Stage 3: E-Commerce

Some companies or entrepreneurs realized the great potential the Internet has for conducting business, and by 1996, they started experimenting with buying and selling online. In the majority of the cases, initial experiments advanced to Internet start-up companies and true pioneers of business-to-customer (B2C) and business-to-business (B2B) e-commerce. Web sites became very intuitive for customers' usage, navigation was simple, search engines were sophisticated, new sales and distribution channels were being created, and companies were integrating their businesses with partners, customers and suppliers. Customers are able to submit their orders electronically, make payments, place orders and require smarter and innovative ways of distribution. Also, they can visit sellers' web sites, compare their offers and make more

informed decisions. Companies are trying to anticipate their needs and be the first to offer a new product or service and build a reputation and trust (Choi, 2000).

Therefore, the term electronic commerce (e-commerce) refers to conducting business electronically, or rather buying and selling online. Motives and visions for taking significant efforts towards e-commerce are customer acquisition, first-mover advantages and finally 'let's do business on the web', thus taking a portion of extremely potential e-markets. These motives very much differ from the motives in stage one or two. They are more business-focused (or rather commerce-focused). By this time, such a motive or vision resulted in establishing a start-up company with aggressive Internet strategies and very innovative ways of doing business and making a profit (Amazon.com, eBay, ETrade, E.Schwab, etc.).

Nowadays, many of them are truly leaders in their area of business and surely in a very commanding market position, with a huge advantage over (traditional) competitors. In stage three, companies experienced channel conflicts and needed to find a good balance of traditional and electronic channels and leave the customers a choice. Therefore, the main focus of stage three is online buying and selling and the main challenge of how to balance traditional and electronic channels and to find a proper channel strategy (Choi, 2000).

2.6.4 Stage 4: E-Business

By this stage, many companies, as well as their customers, discovered new business models but also experienced a new problem: building an online channel or rather a new online business on top of an inadequate or inefficient business process. Therefore, the fourth stage of e-business is about re-engineering or redesigning business processes to match customers' expectations in the new economy (Choi, 2000). The focus of this stage is to build remarkable and powerful e-processes and a new web-business model mainly through the radical reengineering of inefficient business processes and their adjustment to the e-business environment. Integrative electronic business (e-business) also means that back-office business processes need to be synchronized with the demands and the expectations of e-commerce. If not so, customers will very soon notice the signs of bad adjustment: products that do not arrive on time, or do not arrive at all, e-mailed questions or requests with no responses, inability to track order status, web sites that break down, weak network access, no personalization opportunity, poor speed of service, problems with customer returns, clumsiness in placing orders, handling customers responses, etc.

2.6.5 Stage 5: E-Enterprise

With the reengineering project, companies got rid of inefficient processes and could proceed building a new business model. The reengineering process generally means that the management model also requires some changes. Rockart et al. (1996) realized that management processes could also benefit from being redesigned because they were not synchronized with the newly-designed business processes, they were not fully supported by the new technology and information system, and they were often based on the old ideas of organizational design. Intensive electronic business integration makes assumptions for the dynamic decision-making process because with such technology support, the decision can be made in real time. While the business

process is still going on, transactions can be monitored and analyzed in real time, information can be collected online, dynamic pricing service can be offered, etc.

Stage five is labeled ‘e-enterprise’ because it is about decision-making becoming entrepreneurial and about communicating decisions across the enterprise (mainly through advanced intranet solutions from stage two). Choi (2000) stressed that the critical success factor in this stage is to recruit, develop and empower people who have the skills to use information and act on it (so called 'infopreneuirals').

2.6.6 Stage 6: Transformation to New Economy Business Models

E-business era dramatically and strategically changed traditional business models. Direct access to information and their quick and cost-effective global reach enables radical changes in all economic sectors and changes in companies of all sizes and business activities. The reach and richness of information over an open network infrastructure gradually expand a company’s boundaries towards extended enterprises and strategic alliances with a modular or networked structure. Kalakota et al. (2000) stated that ‘the ability to streamline the structure, influence and control of the flow of information is dramatically more powerful and cost-effective than moving and manufacturing physical products’. Companies of all sizes have adopted an e-business infrastructure and redefined their own value chain to value network, converging to new business models.

Transformation implies that a company has successfully implemented the necessary stages to meet the new economy environment, thus the final result is to be ‘comfortable with the new economy’.

2.7 Applying E-business in FMCG Wholesale Enterprises in Palestine Using a Framework from ERP Implementation Theory

The purpose of this section is to describe ERP and e-business in FMCG industry and to develop a model for e-business based on the ERP implementation framework. This section also focuses on the Enterprise Resource Planning (ERP) framework comparing some of the characteristics of ERP and ERP implementation with e-business. The main benefits of this approach are that ERP has the advantage of having a longer history in FMCG industry as well as a direct relation to the manufacturing and distribution process in a corporation. There are also several models and theories based on this framework (e.g. Chen, 2001; Al-Mashari et al., 2003) that can provide useful insights in other areas besides ERP. The reason for using ERP as a framework for e-business in FMCG industry is thus the increased focus on usability in logistical operations. It is also believed that there is a need to focus on the possible outcomes of e-business before deciding to implement e-business and to what extent it is to be used as a tool in FMCG wholesale enterprises in Palestine.

2.7.1 Enterprise resource planning

2.7.1.1 The implementation phase

From ERP literature the two areas have been recognized as especially important when it comes to the functionality of ERP systems; the implementation of the ERP system and the effect that the ERP system is recognized to have on the organization (Al-Mashari et al., 2003). Implementing ERP requires that the implementing organization fulfils a large number of factors making the implementation successful. These factors span from data quality and hardware issues to management support and project-based teams. ERP systems are claimed to have certain effects on

the organization. Effects that can be related to ERP are mainly organizational issues and changes in efficiency due to the new system.

2.7.1.2 Management support

During the last couple of years a large number of articles have been written on the ERP implementation process. The ones mentioned here are just a fragment of the rich spectra of articles on the subject. The actual implementation process is significant for whether an ERP system can provide improvements in efficiency in a company. If not implemented properly, an ERP system can cripple a company.

According to Wagle (1998) implementation of ERP systems successfully calls for Strong leadership, a clear implementation plan; and a constant watch over the budget. Umble et al. (2003) mention human resources; decision processes (including involvement of the staff and top management support); project management; and technology fit (familiarity of the used technology). A review of successful ERP implementations has shown (Bingi et al., 1999) that leadership and top management commitment are the most critical factors in organizations embarking on ERP implementation, as they ensure a smooth change management and system rollout.

> *"…leadership is a propagated approach of individuals and champions who can effectively implement change programs such as ERP systems and who are not averse to modern ideas, learning and growing the business through innovation and best practices"* (Al-Mashari et al., 2003, p. 360).

Cultural and structural change is a multi-faceted area related to the success of the implementation process. Al-Mashari et al. (2001) state that the key to a smooth rollout is the effective change management from top. In some cases organizations must even change the way they do business in order to benefit from a migration to enterprise solutions (Tarn et al., 2002). In the same way, the chosen ERP system has to fit the organization. Hong and Kim (2002) state that:

> *"ERP adaptation increase the feature-function fit between ERP and the adopting organization which is likely to result in lower resistance, reduced training needs and less organizational adaptation"*. (Hong and Kim, 2002, p. 31)

Implementing an ERP system means systematization and centralization of information management and adoption of standard approaches to codifying and processing information (Newell et al., 2003). This means that information that used to be functionally concealed becomes available throughout the organization in a predefined format (Wagle, 1998). There is also a lack of knowledge of what an organization actually can achieve by implementing an ERP system. At the same time the organization also has to be able to take advantage of the knowledge gathered within the system. As the organizations become increasingly efficient they also tend to become less flexible. Newell et al. (2003) studied the combination of knowledge management and ERP and came to the conclusion that:

> *"While ERP emphasizes the improvement of information processing efficiency, knowledge management can facilitate the simultaneous development of organizational knowledge exploration and exploitation capability"* (Newell et al., 2003, p. 30)

Papers focusing on the process of implementing ERP are numerous as well as how to categorize the requirements on the implementing strategy. Four main areas have been chosen based on the studied material:

1. Top management support: The support of the top management has proved to be vital in many large implementation projects. The top management support often reflects the importance of the project from the management's perspective.
2. Project management and Strategy: A clear strategy of how to succeed in and to manage a project often will pay off both financially as well as in effectiveness and efficiency of the end-product.

3. Change management: Implementing technical systems means, in most cases changes in the organization. This organizational change requires a strategy for managing change to be successful.
4. Knowledge Management: Knowledge management can facilitate the simultaneous development of organizational knowledge. Knowledge and skills that cannot be included in a standardized ERP system must be compensated through other channels.

2.7.1.3 Implementation and Organization

As mentioned earlier information systems in general have proved to be an important tool for achieving supply chain integration and visibility throughout the supply chain (Bowersox and Closs, 1996). Integration of processes and functions is also one of the key areas of ERP systems (Rutner et al., 2003). Therefore it is important to be able to integrate systems and functions of a company implementing such a system.

A consequence of implementing an information infrastructure as an ERP system is that the sequence of choosing software package is reversed. Instead of first choosing how to do business and then decide upon an appropriate software package, the business process must often be modified to fit the system. This, in turn, makes the implementation process somewhat special. Many companies fail to obtain the full benefits of ERP systems because they are not organized in a way that fully benefits from the new information tools provided by the enterprise system (Chen, 2001).

ERP systems are also a valuable tool in FMCG wholesale enterprises. Due to its role within internal integration it is also an important part of the inter-organizational communication. ERP links external suppliers, thus increasing the visibility in the supply chain (Chen, 2001). Financial information that initially made the core of ERP systems is now combined with information from human relations, operations and logistics, sales and marketing (Umble et al., 2003).

The role of ERP systems, as has been discussed previously, is to integrate different information systems and to provide an information system infrastructure from which other applications can retrieve and deliver data. E-business systems have to have this support, both in terms of external data, data from other related information systems as well as internal data, and information regarding availability of products and resources.

Especially the development within ERP and e-business has been very dependant on the available technology. The development of ERP systems brings increasingly potent and holistic systems that encompass all functions needed in an organization. From being focused on one or a few areas, i.e. production, financials or human relations, larger ERP suppliers offer totally integrated solutions and connectivity to other ERP systems. In this sense ERP systems are dependent on available technology and the readiness in the organization where it is being implemented.

The role of technology, and specifically information and communication technology, ICT, is thus an important area in implementing ERP systems. From Umble et al. it can be noticed that the development of MRP and MRP II systems and eventually ERP has in many ways been enabled through progress in the ICT area. They state that:

> *"Areas such as product design, information warehousing, materials planning, capacity planning, communication systems, human resources, finance, and project management could now be included in the plan. Hence the term: ERP"* (Umble et al., 2003, p. 242).

Modern information and communication technologies increase the variety of supply chain design options which in turn makes it possible to create significant cost and value advantages (Christiaanse and Kumar, 2000). ICT also makes it possible to detach information flows from physical flows which increase the coordination between physical processes.

Based on the ERP literature mentioned here, the factors chosen to illustrate ERP and organizational issues are the following:

1. Internal integration - between systems: The role of ERP is first and above all to integrate the functions within an organization; therefore internal integration is one of the most important criteria for ERP. The success of ERP systems depends on its ability to connect users, functions and processes.
2. External Integration - between organizations: Supply chains and supply networks start competing with other chains or networks; external integration becomes important. External integration, however, implies internal integration. ERP systems have to be able to connect to other ERP systems across organizational borders.
3. Information and Communication Technology (ICT): ERP and technology are very closely related. To benefit from ERP from a management perspective, information and communication technology is considered an important parameter.

2.7.2 Expected Results from Implementing an ERP System

From the ERP literature a number of generic benefits can be found from successful implementations of ERP systems. Shang and Seddon (2000) have identified five main areas where the benefits from ERP have been observed:

- Operational
- Managerial
- Strategic
- Organizational
- IT infrastructure.

The information was compiled from a review of 233 ERP vendor success stories published on the web, followed up by personal interviews with the involved parties to confirm the content of the analysis.

1. Operational benefits: The flexibility of having an ERP system lies within having control of the processes within and beyond the company borders. Operational benefits relate to cost reduction, cycle time reduction, productivity improvement, quality improvement, and customer services improvement (Al-Mashari et al., 2003).
2. Managerial benefits: The managerial benefits arise from the use of data to better plan and manage production, inventory and physical resources and to monitor and control financial performance of products, customers, business lines or geographic area (O'Grady, 2002). Managerial benefits relate to better resource management, improved decision-making and planning, and performance improvement.
3. Strategic benefits: As companies become a part of a larger context and their environment becomes increasingly complex, the more interfaces there will be to other systems and actors in the supply chain. Strategic benefits concern supporting business growth, supporting business alliance, building business innovations, building cost leadership, generating product differentiation, and building external linkages.
4. IT infrastructure: ERP provides an information infrastructure, a base that can be used in order to organize and integrate the different information systems needed in an organization. According to Shang and Seddon (2000) IT infrastructure involve building business flexibility, IT cost reduction, and increased IT infrastructure capability.
5. Organizational benefits: Shorter lead times and rapid changes in the business environment entail increasing dependency between companies, their suppliers and their customers. Organizational benefits relate to support of organizational changes, facilitation of business learning, empowerment, and the building of common visions.

The reason for choosing ERP as a framework is, previously stated, that ERP systems have a long background in management information systems in FMCG wholesale enterprises. There is also an extensive amount of papers and articles covering the area from both an academic as well as a practitioner's perspective. Hereafter the discussed framework will be used on e-business. A comparison between ERP and e-business will follow, leading to an analysis and a concluding discussion stating the potential benefits of using ERP as a framework for e-business.

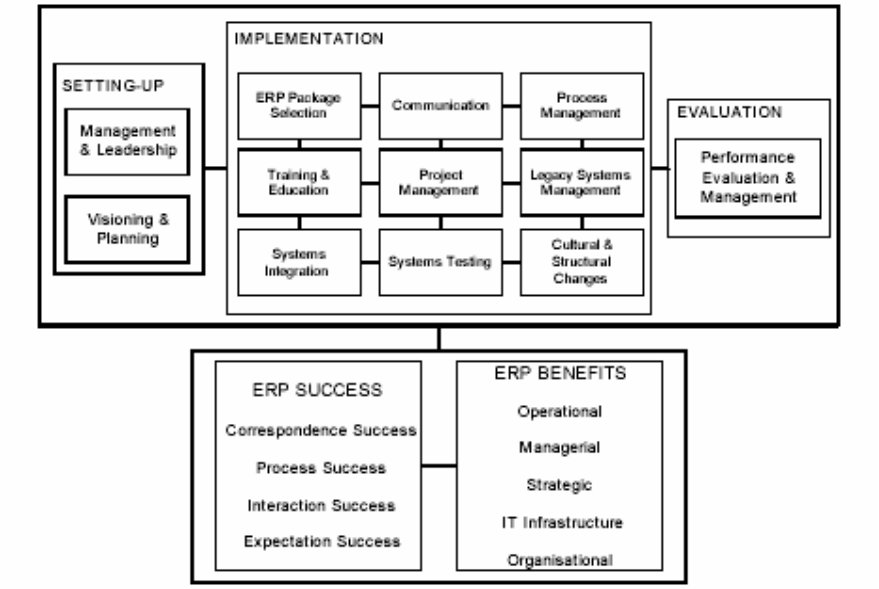
2.7.3 An ERP Implementation Framework

The point of departure for this thesis was that e-business and ERP share many of the same features in terms of information and communication. ERP systems have been around for a long time and have now become an important part of the IT infrastructure of most companies. E-business as such, on the other hand, is quite a recent phenomenon that yet has to be explored. It is therefore interesting to explore the borderline and the interface between the two. This chapter has mainly focused on the potential of ERP and e-business as a tool in FMCG wholesale enterprises in Palestine. The main opportunity for both systems has been identified as a tool for integrating the functions and processes both within a company but also between companies in a supply chain. It has been concluded that many of the existing ERP implementations have been used for integrating intra-organizational processes. As contemporary ERP systems also involve inter-organizational integration within supply chains, the difference between the concepts of ERP and e-business begins to blur. E-business as being defined in this thesis, on the other hand, needs to be integrated into the management processes.

Contemporary management information systems, SCM software packages discussed briefly in the beginning of this chapter, are developed to support supply chain integration. Since the main purpose is to integrate and optimize internal business processes of a single organization as

well as its business partners across the entire supply chain (Tarn et al., 2002). Given that the purpose is to make the supply chain as efficient and agile as possible e-business, ERP and SCM are heading in the same direction. It has been concluded that in order to implement ERP systems in an organization and its immediate environment a number of factors have to be considered. Al-Mashari et al. (2003) use the following model to describe the taxonomy for ERP critical factors (Figure 2-4).

Figure 2-4: Taxonomy for ERP critical factors.



Source: (Al-Mashari et al., 2003, p. 61)

2.7.4 Proposing a framework for implementing e-business

From the previous discussion it is worth noticing the model proposed by Al-Mashari et al. in Figure 2-4. Its practical focus and high level of detail incorporates the previously discussed factors of the implementation phase: top management support, project management and strategy; and change management. It also includes the discussed organizational aspects of knowledge; internal and external integration; and technological aspects included in this thesis. This is also the base upon which the proposed framework of e-business is built.

It is stated that the efficiency of the management information system often is decided on an organizational level. This means that many of the problems that can be found as companies implement e-business and information systems can be related to problems with the existing frameworks of implementation. The organizational structure decides how the individual company is to cooperate within the supply chain and with its suppliers and customers (Akkermans and van der Horst, 2002). Organizational structures encompass a range of relationships from total vertical integration to networked companies as well as management approaches, and performance measurement and reward schemes.

Internal and external integration has been recognized as a fundamental principle of supply chain management (Cooper et al., 1997; Christopher, 1998). Inter-organizational boundaries are overcome through integration of processes within the supply chain (Romano, 2003). It also increases the competitive advantage of individual companies (Christiaanse and Kumar, 2000). A prerequisite of integration is the development within modern information and communication technology. Information and communication technologies are considered to be important enablers for SCM (Simchi-Levi et al., 1999; Romano, 2003). Both e-business and ERP are considered important tools for integration in supply chain management and supply chain integration (Lee and

Whang, 2001; Garcia- Dastugue and Lambert, 2003). One of the issues describing ERP and e-business as enablers is that they are just tools. These tools have to be handled correctly; Tarn et al. (2002) state:

> *"ERP enables the integrated flow of information to be the core system that provides the data needed for all corporate components. In this way, how to take advantage of that information for the use of gaining competitive edge is the key to success."* (Tarn et al., 2002, p. 29).

For e-business the situation is similar. Due to the underlying circumstances though, managers need to choose what form of coordination that is most appropriate for their business needs (Garcia-Dastugue and Lambert, 2003).

The intention of this representation has been to propose a line of thinking. In this model e-business is a tool for coordination and integration. Garcia-Dastugue and Lambert state that:

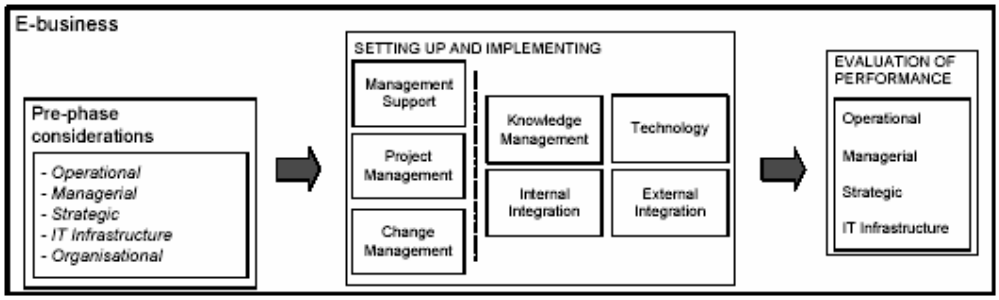
> *"…the extent to which business activities were coordinated in the past was limited, in part, by IT. State-of-the-art IT releases many of these constraints, enabling managers to increase the level of coordination in the supply chain. Now, it seems that coordination is constrained by management's willingness and capabilities to integrate business activities with key supply chain members"* (Garcia-Dastugue and Lambert, 2003, p. 255).

As a first attempt to make a model for e-business integration in organizations the model of Al-Mashari et al. (2003) has been used. The model itself is intended as a first attempt to explain and follow the key issues in implementing e-business in a FMCG wholesale enterprise.

From the original model the argued success factors have been proposed as prophase considerations. These considerations are based on the fact that management information systems, involved in both e-business and ERP, can have considerable effects on logistics and supply chain management. They will also be influenced deriving full advantage from the means that e-business in terms of increased integration will bring. If e-business is treated as a means for increased efficiency in logistics and is considered in the same terms as ERP, proposed by Shang and Seddon (2000), the benefits probably would be clearer. Therefore it is proposed that one should consider

the operational, managerial, strategic, organizational implications it may have and its importance for the IT infrastructure of the company when designing an e-business strategy.

Figure 2-5: Taxonomy for e-business.



Source: (Shang and Seddon, 2000, p. 13)

The next phase in the model represents the implementation phase and constitutes the factors previously discussed in the thesis. These are the key issues found in the ERP literature, i.e. top management support, the importance of fit project management and the organization of change within an organization. A second part of the setting up and implementation phase concerns the organizational and operational effects of e-business on the organization. Here four factors have been chosen; knowledge, technology and external- and internal integration, due to the large implications these issues have proved to have on ERP and management information systems in general.

Finally, there is a need for constant evaluation and measuring of the performance of the system. In this first attempt to build a model, indicators are chosen on an aggregate level. It has also to be noted that this is only a coarse model based on theoretical assumptions. Empirical evidence is needed to develop the model further. The intention with further research is thereby to validate and modify the model through future surveys and case studies.

2.8 Business to Business Electronic Marketplaces

Many different kinds of electronic marketplaces exist. That is the consequence of the dynamics in this research area. Marketplace operators adapt their services and business models to changes in the environment. As a result there is not one business model to focus on. The research would be outdated soon. In this section the researcher intends to describe different aspects of business to business (B2B) electronic marketplaces. This is done to provide insight in the functioning of this phenomenon. And to have a glance at the background of electronic marketplace, where the researcher places it in the context of Electronic Data Interchange (EDI).

2.8.1 Electronic marketplaces

Several authors developed their own definitions of electronic marketplaces. Some use a narrow definition, others a broader one. Due to rapid changes in the business environment, this research area is a very dynamic one. As a result the scientific relevance would be very limited if a very narrow focus is chosen. It could become a part of history much to early. For this reason a widely used definition of electronic marketplaces among Scientific researchers is adopted, which defines Internet-based business to business electronic marketplaces:

> *"An interorganizational information system that facilitates electronic interactions among multiple buyers and sellers*" (Bakos, 1991, p. 301; Choudhury, 1998, p. 473; Grewal et al., 2001, p. 20).

Several names are used for the same phenomenon. Kaplan and Sawhney (2000) use the term Ehubs for electronic B2B marketplaces. Choudhury (1998) uses the term electronic markets. Basically they all address the same idea. The researcher prefers using the term electronic marketplaces, electronic markets, or just marketplaces.

2.8.2 Participant segments

Typically, electronic marketplaces are defined in terms of participants, using acronyms B (for business), C (for consumers), and G (for governments) (Skjøtt-Larsen et al., 2003). The focus of this thesis is on business-to-business (B2B) electronic marketplaces. That means electronic marketplaces that facilitate electronic interactions between businesses. Table 2-3 will show an overview of the different participant segments based on Coppel (2000). The focus of this research is (B2B) which is indicated in bold.

Table 2-3: Participant segments.

	Government	Business	Consumer
Government	G2G	G2B	G2C
Business	B2G e.g. Gatetrade, eFederal	**B2B** **e.g. Transora, Eutilia,**	B2C e.g. Amazon, Letsbuyit
Consumer	C2G	C2B e.g. Priceline	C2C e.g. eBay

Source: (Coppel, 2000).

2.8.3 Electronic Data Interchange (EDI)

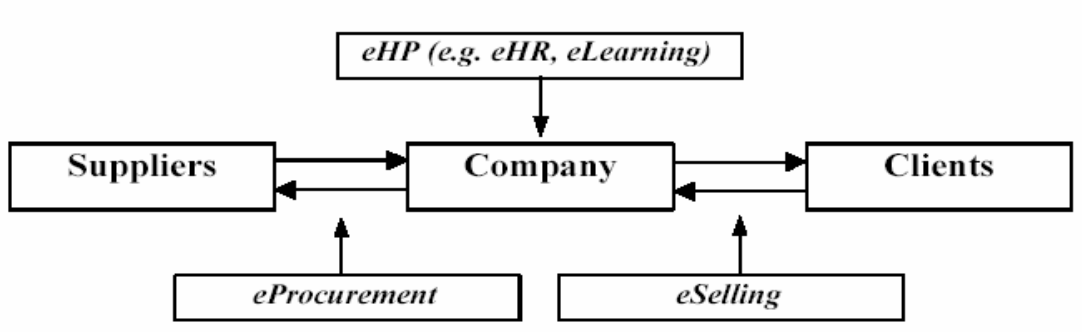
Electronic data interchange is the electronic exchange of specially formatted standard business documents such as orders, bills, approvals of credit, shipping notices, and confirmations sent between business partners. EDI is used primarily to transfer repetitive business transactions electronically (Turban et al., 2000). EDI, electronic data interchange, works by providing a collection of standard message formats and element dictionaries in a simple way for businesses to exchange data via any electronic messaging service. (Geocities, 2004)

2.8.4 Definition of B2B Activity of E-commerce

The Ovum Research Company defines the B2B activity of e-commerce as: the use of applications and digital communications to support the exchange of value between organizations - typically, the exchange of goods or services for payment represented through an online transaction. (Ovum, 2004).

We will look at the business-to-business activity of eCommerce by examining the basic supply chain that is described in the Figure 2-6 below. The supply chain normally consists of a certain amount of suppliers and clients as described in the picture. What distinguishes B2B from B2C, for example, is the fact that these clients are companies themselves when talking about B2B activity (Ovum, 2004).

Figure 2-6: The Components of an Electronic Supply Chain.



Source: (Ovum, 2004).

We use the concept of e-business to describe the ensemble of all these components. As discussed in the beginning of this chapter, the concept of e-business is normally used to describe the whole business-wide system whereas the concept of eCommerce means the transactions of goods and services that are handled electronically. Thus eCommerce can be found in two places in the picture: e-Procurement and e-Selling. We use the word e-Procurement to describe the

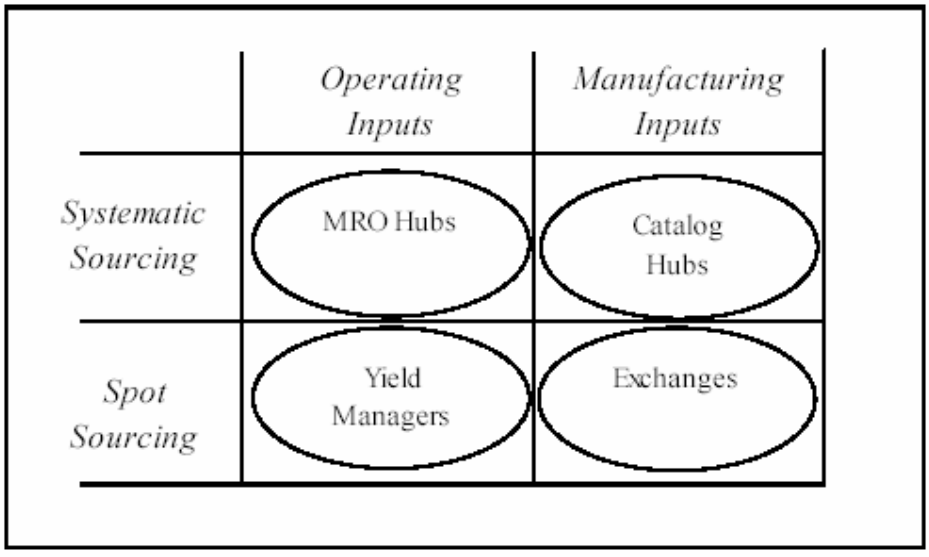
electronic procurement process and the concept of e-Selling when talking about e-Commerce conducted towards the clients (Ovum, 2004).

Also the company's internal functions can be handled electronically by using intranets. We use the term eHP which means electronic Human Performance. It comprises for instance eHR (electronic Human Resources) and e-Learning (electronic Learning). eHR is the application of new and innovative technologies to the collection, dissemination, and processing information related to human resources to allow access at anytime, from anywhere. eHR solutions reduce administrative overhead expenses, improve service, and produce value for the enterprise (Ovum, 2004).

2.8.5 The B2B Matrix

One way of presenting these electronic markets is the B2B matrix (Kaplan and Sawhney, 2000). The matrix is presented Figure 2-7. It applies a two-way classification scheme – manufacturing inputs versus operating inputs (the "what") and systematic sourcing versus spot sourcing (the "how").

Figure 2-7: The B2B Matrix.



Source: (Kaplan and Sawhney, 2000, p.100)

2.8.5.1 MRO Hubs

In MRO (maintenance, repair and operations) hubs, the operating inputs tend to be low-value goods with relatively high transaction costs, so these e-hubs provide value largely by increasing efficiencies in the procurement process. Many of the players in this arena started out by licensing expensive "buy-side" software for e-Procurement to large companies, which used the software on their own intranets. Now, instead of licensing their software to individual companies, the e-hubs host it on their own servers to provide an open market. These markets give buyers access to consolidated MRO catalogs from a wide array of suppliers. Because MRO hubs can use third-party logistics suppliers to deliver goods, they can disintermediate, or by-pass, existing middlemen in the channel without having to replicate their fulfillment capabilities and assets. (Kaplan and Sawhney, 2000)

2.8.5.2 Yield Managers

Yield Managers create spot markets for common operating resources like manufacturing capacity, labor, and advertising, which allow companies to expand or contract their operations at short notice. This type of e-hub adds the most value in situations with a high degree of price and demand volatility, such as the electricity and utilities markets, or with huge fixed-costs assets that cannot be liquidated or acquired quickly, such as manpower and manufacturing capacity. (Kaplan and Sawhney, 2000)

2.8.5.3 Exchanges

Close cousins of traditional commodity exchanges, on-line exchanges allow purchasing managers to smooth out the peaks and valleys in demand and supply by rapidly exchanging the commodities or near-commodities needed for production. The exchange maintains relationships with buyers and sellers, making it easy for them to conduct business without negotiating contracts

or otherwise hashing out the terms of relationships. In fact, in many exchanges, the buyers and sellers never know each other's identity. (Kaplan and Sawhney, 2000)

2.8.5.4 Catalog Hubs

Catalog Hubs automate the sourcing of non-commodity manufacturing inputs, creating value by reducing transaction costs. Like MRO hubs, catalog hubs bring together many suppliers at one easy-to-use Web site. The only difference is that catalog hubs are industry-specific. They can also be buyer-focused or seller-focused – that is, some catalog hubs essentially work as virtual distributors for suppliers; others work primarily for buyers in their negotiations with sellers. Because the products they offer tend to be specialized, catalog hubs often work closely with distributors to ensure safe and reliable deliveries. (Kaplan and Sawhney, 2000)

In our opinion, it is clear that the electronic marketplaces in the future will differ according to the industry and products in question. Different businesses have different ways of conducting business and also their cultures are different. Hence, we see that it cannot be seen as a good idea to generalize the structure of electronic marketplaces. In this perspective, this matrix is the most suitable because it divides the products to be procured into operating inputs and manufacturing inputs, and presents solutions that are specific to each case.

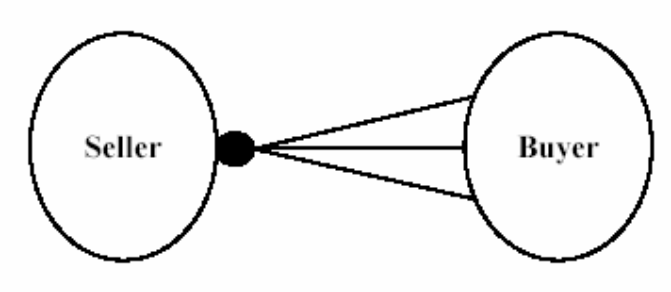
2.8.6 B2B Marketplaces

The Figure below sets the foundations for an assessment of the buyer-supplier relations. Hence we take on the concepts of supplier-oriented, buyer-oriented and intermediary-oriented marketplaces.

2.8.6.1 Supplier-Oriented Marketplaces

Supplier-centric solutions are created and managed by the suppliers on behalf of their community of business clients. This includes most web-ordering sites, a popular example being Dell's web site.

Figure 2-8: Supplier-Oriented Marketplaces.



Source: Own.

> *"The supplier-oriented marketplace for B2B eCommerce can be successful if the supplier has a sufficient number of loyal business customers and the frequency of orders is not formidable from the buyer's point of view."* (Turban et al., 2000, p. 95).

The supplier-oriented marketplace B2B model is the most common of the B2B models, and most of the manufacturer-driven electronic stores belong to this category (Turban et al., 2000).

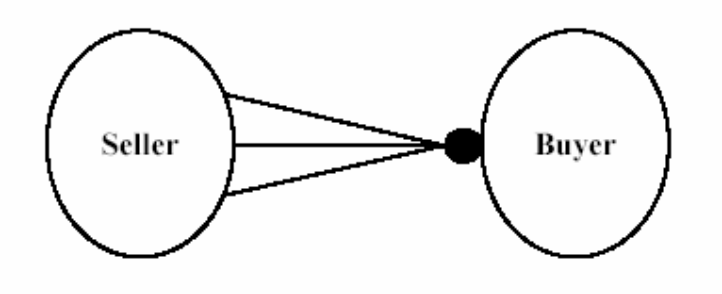
Supplier-centric solutions are inexpensive for the buying company to implement. In many cases the supplier will give the solution away in exchange for a long-time commitment. Today's most common supplier solutions are secure web sites to which the buying company can link to place orders with their supplier. Over the long term, supplier-centric solutions yield significant

negotiating power to the supplier due to the supplier's ownership of the ordering process and the subsequent high switching costs for the buyer (Niven & Wimbish, 1997).

2.8.6.2 Buyer-Oriented Marketplaces

Buyer-centric solutions are typically installed and operated within the purchasing company's infrastructure. A perfect example of a company that uses a buyer-centric solution is General Electric.

Figure 2-9: Buyer-Oriented Marketplaces.



Source: Own.

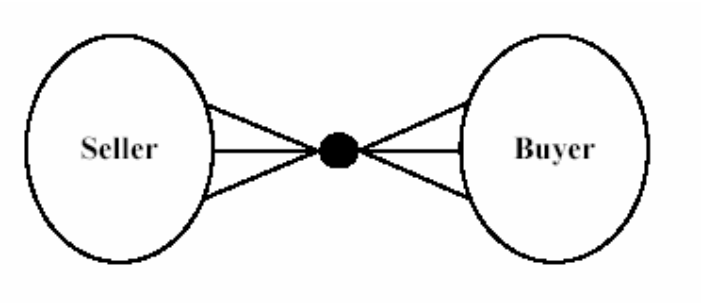
Buyer-centric solutions offer a buying company the greatest degree of control and flexibility over internal procurement processes, but they cost the most to install and require ongoing resources to support. However, a buyer-centric solution is estimated to be the preferred solution for the majority of large public corporations. There are two main reasons for this. First, the payback period for this type of solutions is relatively short. According to Niven & Wimbish (1997) in some cases the payback period for buyer-centric solutions has been equal to or less than 90 days.

Secondly, the buyer-centric solutions are designed to work within the buying company's existing infrastructure. All supplier catalogs are compiled into one standard format and are maintained on a buying-company-controlled server (Niven & Wimbish, 1997).

2.8.6.3 Intermediary-Oriented Marketplaces

Third-party solutions, such as General Electric Information System's Trading Process Network, are created and operated by third-party service providers and act as a transaction processing bridge between communities of buyers and sellers.

Figure 2-10: Intermediary-Oriented Marketplaces.



Source: Own.

The third-party marketplaces are suitable if companies wish to leave Web marketing to a third party. These intermediary-oriented marketplaces often act as additional, on-line channels to other existing channels (Timmers, 1999). An example of the use of this type of marketplace is Boeing and www.procurenet.com.

E-Procurement services offer buyers the option to outsource purchasing functions and applications to a third party. For an annual or per transaction fee, buyers utilize third-party web Third-party applications to post RFQs (Request for Quote) and RFPs (Request for Proposal), organize purchases, and manage procurement information. In most cases, the third party simply provides the transaction processing capability, staying clear of long-term obligations to suppliers. In some cases, the third party also acts as a group-purchasing organization on behalf of its subscribers and resells supplier contracts (Niven &Wimbish, 1997).

2.9 An Instrument to Assess Organizational Change Capabilities for E-Business Transformation

This section investigates organizational change strategies for e-business transformation. It proposes an instrument to measure the strength of a company's organizational change capabilities to make this transformation.

Most 'brick and mortar' business in the year 2000 are faced with a massive wave of change associated with the Internet. It is impacting the fundamental rules of business and changing their relationship with customers, suppliers and how work gets done. Firms that successfully make an e-business transformation will be rewarded with growth and strong returns. Many of those who are unable to change will not survive in the long run. A fundamental issue in e-business transformation is disruptive organizational change. A review of the academic literature identifies ten dimensions of organizational change capability that can increase the probability that a company can make a successful disruptive organizational change. These ten dimensions will be demonstrated in the following subsections.

2.9.1 Definitions

1. Discontinuous change

Discontinuous or disruptive change is significantly different from continuous change. Kuhn (1970) makes the link between the technological/strategic definitions and the organizational change definition by stating that the discontinuous change in the philosophy of one person or an organization is analogous to a "paradigm shift" in scientific revolutions. Reger et al. (1994) define disruptive or radical change as a discontinuous change in the basic philosophy of one person at the individual level or of the shared identity of members of the organization at the organizational level.

Huy (1999) defines discontinuous change in the perspective of how difficult it is to radically change organizations because it alters core perspectives and values and often necessitates wide mobilization throughout an organization. This requires a great deal of emotional energy.

2. Receptivity

Receptivity denotes a person's willingness to accept change. At the organizational level, receptivity refers to organizational members' willingness to consider individually and collectively proposed changes and to recognize the legitimacy of such proposals. Receptivity to change can be characterized by varying degrees of willingness to accept the proposed change from resigned passive acceptance to enthusiastic endorsement. Resistance to change ranges from moral outrage (leading to sabotage) or cynicism or passive resistance (Huy, 1999).

The following subsection will focus on identifying the ten key dimensions of organizational capability that can increase the probability of successful discontinuous organizational change.

2. Organizational Change Success Factors

> *"The brutal fact is that 70% of all organizational change initiatives fail"* (Beer and Nohria, 2000, p. 60).

Change with a high probability of success begins with a management analysis of whether change is within organizational capabilities. Systematic change involves a set of tools and processes to improve performance (Sink and Morris, 1995).

Most managers consider resources. Assessment of organizational values and process are even more important (Christensen, 2000). Systematic change aligns customers, products/services, processes/tools, structure, and skill mix (Kotnour, 1999). Managers, who consider resources only

and do not consider the process changes needed or the culture changes needed, often fail. Some change requires process and cultural changes that are beyond the capability of the organization.

If managers are able to manage their current organizational change capabilities, they are more likely to make good decisions about whether a change is likely to succeed in the short term. They can also know better what they need to do to strengthen their organizational change capabilities so their organizations can be more adaptable in the future.

1. Creating an Emotional Unifying Vision

The first dimension of successful disruptive organizational change is the business unit manager's ability to create an emotional, unifying vision. There is a very broad base of current literature to support the importance of this dimension.

A disruptive organizational change is a very big challenge for senior leadership. The success of a disruptive organizational change, according to Amason (1996) demands adherence to the spirit of the change goals, rather than just to the letter. This is necessary to overcome unforeseen complications and necessitates deep understanding of the change rationale and commitment that minimizes inconsistencies in operation. Dutton & Duncan (1987) find further that mobilization requires organizational commitment and effort devoted to change actions, which is contingent on adequate receptivity to the proposed change.

2. Use of Symbols, Ceremonies, and Language

Executives do not make change by the operational activities they do themselves. They use symbols, ceremonies, and images to implement culture (Peters, 1978). Their symbolic activities are used to signal cultural values to large numbers of employees (Trice & Beyer, 1987). These are used because culture is hard to change by conventional means (Dandridge et al., 1980).

> *"Managerial work can be viewed as managing myth, symbols, and labels…because managers traffic so often in images, the appropriate role for the manager may be evangelist rather than the accountant."* (Weick, 1979, p.42).

3. Enabling the free flow of emotions

The content of emotions (negative versus positive) is not as important as how leaders deal with them. Leaders who deny emotionality in the workplace will also block the emergence of new ideas from the base of the organization at a time when creativity and contextual knowledge are most needed to realize radical change. Organizational members should be encouraged to express their full range of emotions, without fear of reprisal (Duck, 1993). The higher the level of encouragement, the higher the level of mobilization to a proposed change will be. The higher the level of freedom for organization members to display authentic emotions during radical change, the higher the level of learning will be (Huy, 1999).

4. Providing a Transition from the Past

It is unlikely that one can initiate cultural change by dismissing a basic constituent assumption as wrong. A new synthesis has to be found that will retain both the old and the new (Schein, 1992). The more the proposed change can be framed and accepted by the recipients as an addition or an expansion of existing values, the more continuity is perceived to exist between the past and the future (Huy, 1999). To the extent that radical change does not require a complete destruction of the past, the stronger the level of the identification with the organization and the longer the organizational members' tenure, the higher their level of learning will be (Huy, 1999).

5. Creating a Playful Environment

The higher the level of playfulness, the higher the likelihood of learning will be (Huy, 1999). At the organizational level, the dynamic of playfulness refers to the ability of an organization to create a context that encourages experimentation and that tolerates mistakes during radical change. A relatively safe and protective work environment has to be created to allow

experimentation and to test new organization identities without premature lock-in (Ashforth, 1998).

6. Change Infrastructure

There is a need for an infrastructure to drive the change (Sink and Morris, 1995). Huy (1999) argues that the ability to mobilize hinges on the availability of adequate resources (finances, time, and human resources), support structures, and systems, but most important the necessary commitment and skill sets to cooperate during the change process. The infrastructure must also have involvement down the hierarchy ensures multiple, diverse perspectives are integrated into the change process. Horizontal involvement across functions helps ensure the change process is conducted from a holistic perspective and not an individual sub-organization perspective (Kotnour, 1999).

7. The Role of First Line Supervisors

The psychological proximity of first line supervisors highlights their influence as the most salient representatives of management actions and policies, support of first line supervisors is crucial to effecting change at the level of employees (Kozlowski & Doherty, 1989). For a successful change, an organization needs to disperse involvement and leadership throughout the organization.

First line supervisors, however, can sometimes be the strongest opponents to change. When they don't buy into a change or do not actively support it, the change will often fail despite having all of the other change strategies in place. Stewart and Manz (1997) recommend a three-step approach to overcome supervisor resistance. First, create dissatisfaction with current supervisory behavior. Next, help supervisors see a gap between their current behavior and optimal behavior. Finally, provide a psychologically safe environment to facilitate behavioral change.

8. Project Management

Major change must be carefully managed to ensure commitment and coordination from individuals and groups involved in the process. Project management has been defined as a critical success factor to ensure successful change. It helps ensure the transformation's goals and objectives are being met in a timely fashion (Grover, 1999).

9. Training

The majority of organizations use some sort of training as part of their change efforts (Hackman & Wageman, 1995). Many organizations make the assumption that change occurs as a consequence of training and education. They assume that training and education can change individual attitudes and behaviors and can also be a stimulus for changes in organizational practices. Coyle-Shapiro (1999) argues that this is a bad assumption and that in most cases training and education alone are not powerful enough to elicit the desired change.

10. Reward system

One key to implement organizational change is to use the pay system. Pay system change can have a major impact during a discontinuous change for two reasons. Rewards effect motivation when they are effectively tied to performance and significant amounts of reward are given. The second impact is in the labor market which impacts the company's ability to attract and retain the "right" employees. However, changing the reward system only is rarely adequate. All key elements of organizational effectiveness including the reward system must be changed simultaneously (Lawler, 2000).

Zingheim and Schuster (2000), find that pay and rewards accelerate the communication of a new business strategy to the workforce. It helps extend their line of site and translates a more

distant strategy into terms people can understand and make real. Nicholas Aquino (1994) also finds that in implementing organizational change managers must reward new employees undergoing change.

2.10 Conclusion

Nevertheless, e-business can be realized through a business transaction or service conducted over the Internet and represents every way of doing business that is very much dependent on the intensive use of information and communication technology (ICT). In this way, ICT becomes the starter of the business of modern companies, as well as the infrastructure for the development of new business models. E-business dramatically and strategically changes traditional business models. Companies are now pursuing more intensive and interactive relationships with their business partners: suppliers and customers.

From this chapter it was concluded that Intensive use of e-business can provide a number of opportunities and actual benefits to companies of all activities and sizes. In general, through the use of web sites, companies can create a global presence and widen business boundaries.

Thus this chapter will contribute enormously in the design of the research methodology that will be proposed, and the different areas that the research tool is going to investigate. In addition, this chapter provided the base evaluate the output of the survey with respect to a common ground, which is shared among different researchers for evaluating and assessing e-business readiness in different sectors and industries.

3 METHODOLOGY

In this part of this research the researcher will focus on the methodology which was adopted to investigate the different aspects of the e-business readiness in the FMCG sector in Palestine. Reliability verification of the model is the first aim. Another aim is to describe the perception of the various constructs among respondents, both manufacturers and distributors, and the differences between participants and non-participants in the e-business evolution paradigm. The researcher will discuss these findings in the descriptive analysis following this chapter.

There are various research methods for different research problems. Choosing one or several suitable methods is very important to get a persuasive research result. In this chapter we discuss methodological issues related to the identified problem.

3.1 Research Strategy

The actual research is defined as descriptive in nature with aim to provide an insight into the potential of applying e-business in the FMCG Wholesale enterprises in Palestine. In deciding a research strategy, there are two approaches for a research work, i.e., a theoretical or an empirical one. Theoretical research requires intensive textual investigation while empirical research in business and management studies requires extensive interaction with people (Brown, 1993). The aim of the researcher's work is to try to make this thesis work as a practical case based on theoretical studies. In this thesis, the researcher will focus on the empirical approach. Simultaneously, a good theoretical background is a prerequisite. First the researcher reviews the literature, documents regarding FMCG Wholesale enterprises in Palestine, e-business and information systems as much as possible, trying to define a theoretical foundation. Based on this academic foundation, the researcher focuses on taking the empirical approach to make a

description of how companies operate in practice when they deal with the issues of information systems and operations of FMCG wholesale enterprises in Palestine. Together with this approach, the researcher makes several interviews with persons in FMCG wholesale enterprises in Palestine.

3.2 Objectives of the Study

The main objective of the research work was to investigate the potential of applying E-Business in FMCG wholesale enterprises in Palestine.

The entire study was divided into two phases

1. Phase 1: Creating the Instrument

    1.1. To study the existing set up of E-business in the FMCG Industry and design the rough draft of the questionnaire.

2. Phase 2: Pre-testing the questionnaire

    2.1. To assess the questionnaire and test its relevance, reliability and validity (keeping in mind the present Palestinian Business environment) by conducting a pilot (descriptive) study using the instrument designed.

    2.2. To identify the critical problems that can arise for the respondents and the researcher through the course of conducting the final field study.

To get some preliminary insights into the present state of the applying of E-business and the state of information technologies in the organizations, especially the ones pertaining to the internet.

1. Salient Features of the Research Project and the Research Design

1.1. Nature of the Research:

Descriptive (does not test the causality of any phenomenon, but to a certain extent it attempts to seek explanation for some common questions). Broadly it only tries to capture the present status of the potential of applying e-business in FMCG wholesale enterprises in Palestine.

1.2. Degree to which the research questions were crystallized:

The initial phase (Phase 1) of the study consisted of structured in-depth interviews. This was used to determine the relevance of the assumptions and make the questionnaire for the pilot study. In the pilot survey conducted (to test the instrument that is to be used later in the confirmatory study) the questions were more formalized.

1.3. Time Frame of the Study:

The Pilot Study was a cross Sectional study.

1.4. Data Types and Scales used in the measurement:

- Used most of the available variable scales as per the appropriateness of the place and the question. The data pertaining to the use of different software were Nominal.

- the measurement of attitudes of the CEO and the head of the related departments of the companies on the effectiveness of different system was on a Likert (Interval) Scale. (Maxwell, 1996)

1.5. Mode of Communication:

Except the first ten respondents, where it was more of a structured personal interview, all the other respondents were given a questionnaire which was to be self administered and mailed, emailed, faxed back or collected personally.

1.6. Software used for Statistical/ Multivariate analysis:

SPSS (all the results in the body text are in the SPSS format)

3.3 Design of the Study

The research methodologies adopted for this study were:

1. **Pre- field Study**
    a. structured in-depth interviews were conducted to create the initial questionnaire (the instrument)
    b. Expert opinions on the questionnaire were taken and further improvements were made to the questionnaire.

2. **Field Study**
    a. Structured Questionnaire was prepared and survey was conducted by explaining the purpose of the research to the respondents and administering the questionnaire.
    b. Judge panel test was also conducted to test certain questions that were felt to be inadequate in their design, to evoke responses from the respondents and to test the effect of changing the structure of these questions.

The structured interviews were conducted to gain insights into the contemporary status of the Palestinian FMCG wholesale enterprises (pertaining to the internet related

technologies that were deployed in these companies) and also to get opinions on various issues that were relevant to the FMCG industry or business applications of the new Information Technologies. These expert opinions helped in improving the questionnaire in the pre-field phase of the survey.

Most of the questions are non-disguised; but to assess the non factual variables disguised questions are used. For example, there are some questions pertaining to the effectiveness of the email, internet etc. which are measuring the attitudes of the respondent and we take these data as the proxy for that of the organization as a whole. The rational behind this is that the respondents are typically top management personnel in the organization and they are in a position to assess the impact of these technologies on their organization.

In some of the cases to test the relevance of assumptions and to assess the impact of the questionnaire on the respondent, personal interview were combined with the filling up of the questionnaire.

3.4 Method for Collecting Data

Data collection can rely on many sources of evidence. According to Yin, there are six important sources; these are documentation archival records, interviews, direct observation, participant-observation, and physical artifacts (Yin, K.R, 1994). There are two types of data generally: primary data and secondary data (Jacob, 1990). Re-concept of primary data implicates the collection of information through direct observation, personal interviews, and conducting conversation. Re-concept of secondary data means the study of document; biographies, web-sites and other historical and documentary records relevant for the studied issue (Remeny, et al, 1999). We will have both types of data collection in this thesis.

3.4.1 Primary Data

The capturing of the primary data was conducted through the researcher's employs his personal and observational experience since is an MIS manger and have been involved in several ERP, CRM, and complete e-business implementations. In addition to the structured personal interviews and survey, this is a triangulation approach in nature (quantitative and qualitative); and will be employed to gather information. We have also been going through an introduction of the industry background, the organizational structure of the Palestinian FMCG wholesale enterprises and the operating environments, from which we got a clear picture of the originations structures and general information of different business processes.

3.4.1.1 Personal Structured Interviews

Due to the size of the FMCG sector and the complexity of the operational environment where the companies fulfill their processes, it is very difficult to find an accumulated information resource for all FMCG wholesale enterprises in Palestine. The researcher decided the personal interview would be preferable in the study area, as the researcher can talk face to face with the person who is in charge of the business the researcher is interested in and instantly follow up the questions. It helped the researcher to acquire the just-in-point information and precise pictures of what and how the business works.

Personal interviews can be done in different ways. The main two are structured interview and unstructured interview (Brown, 1993). In case of unstructured interview, there is no schedule. The researcher's unstructured interviews are mainly with financial specialists in the enterprise, and usually occurred in a relaxed environment such as coffee breaks when people were relaxed. In the structured interviews, the researcher prepared a particular order of questioning before the interviews; this then meant that the researcher could be flexible with regards to questions raised in relation to the research problems. Some of the interviews had to be done along with site visits where what the researcher heard were instantly confirmed by what the researcher observed.

The interviewees are CEO's, CIO's, CFO's, general managers, IS executives and financial specialists. All of interviewees have been working in the company for years; some have been with the company all their working life. Such experienced persons provide and in-depth knowledge.

3.4.2 Survey Instrument and Methodology

3.4.2.1 Design of the Questionnaire for Examining the Assumptions Proposed

In general, survey by questionnaires is an effective mechanism for efficient collection of certain kinds of information. It involves advantages like standardized format of response, quick data gathering and access to a large portion in question. (Milne, 2000)

Based on the inputs from the general understanding of the current scenario, tentative assumptions, and the opinions of the experts in the industry, the initial questionnaire was prepared. This questionnaire was tested using the sample as per above specifications.

The different analyses for refining the questionnaire were carried out. Based on the analysis and the feedback gathered from the executives, the final questionnaire was prepared with necessary modification.

3.4.2.2 The Judge Panel Tests

A small-scale judge panel study was done by converting certain questions (rewording or changing the format to see the effect of the questionnaire). The objective of judge panel test, done mid-way of the study was to determine which version of the question or a set of questions was "better". The judge panel test was used to test:

1 Alternative wordings of questions

2 The effect of changing the order of a set of questions

3 Alternative response options

4 Determining whether some other response should be provided to the respondent.

Evaluation of judge panel tests was done along with the analysis of the original questionnaire.

Modifications in some questions, items used in the questions were brought about to increase the response and the effectiveness of the questionnaire. Some of the respondents had reservations about some questions in the initial questionnaire, due to the sensitive nature of those responses. This was taken care of in the later versions of the questionnaire.

The key objective of the research has been to examine a number of issues regarding the e-business practice on a sample of the 40 Palestinian FMCG wholesale enterprises ranked according to their current ICT readiness, their distribution coverage in the West Bank. To address the study's objectives, a survey questionnaire the researcher considered the most appropriate research methodology for this study. The study was conducted in 2005. The questions, as well as the overall coverage of the questionnaire, have been found to be an effective basis for investigating current e-business practices. The questionnaire consists of the following parts:

1. General information about the company,
2. Structure and current state of IS,
3. E-business practices.
4. E-Market Place activities
5. E-commerce
6. Firm's strategic positions with their suppliers and buyers
7. Current E-business tools and initiatives
8. Manager's perceptions regarding benefits of adoption of various E-business tools.
9. Company's attitude towards change

This thesis particularly focuses on some particular parts of the questionnaire, investigating the following aspects of business process innovation and e-business usage:

1. General e-business issues with levels of e-business usage,
2. General impact of e-business on business processes
3. Key objectives of implementing e-business,
4. Management attitude toward e-business initiatives,
5. Barriers to selling online
6. Assessment of Organizational Change Capabilities for E-business Transformation

3.4.3 Secondary Data

The secondary data which represents the literature review consists of textbooks, journals, research papers, articles and company files and reports. They are collected from the library, target companies and through Internet. They comprised the Chapter 2 of theoretical framework. They were applied in identifying evaluation parameters, classifying applying e-business in FMCG wholesale enterprises characters and analyzing e-business solutions. To provide an up-to-date picture, most of the literature that the researcher used was published during the late nineties or later.

3.5 Reliability & Validity

In order to inform the readers of how trustworthy the result is, the researcher discusses the issue of validity and reliability in this section.

3.5.1 Validity

Validity describes the extent to which the results correspond with reality. The validity consists of two parts, internal and external part. The internal validity deals with the study itself and the direct connection between the theoretical framework and the empirical studies. That is, the interviews shall be performed with relevant people and the experiment shall have enough samples to answer the questions (Svenning, C., 1996). During this thesis writing, all the interviewees were CEO's, CIO's, CFO's, general managers, IS executives and financial specialists who had extensive experience of the field. On the other hand, the survey questionnaire was pre-tested on postgraduate and professors from related fields for content validity comprehensiveness and readability. After the feedback from the pre-testing had been obtained, the questionnaire was pilot tested with five senior IS executives.

The external validity concerns the study with all its contents in a wider perspective, that is, if it is possible to generalize from the study (Svenning, C., 1996). The study of the e-business in FMCG wholesale enterprises in Palestine is on the strategic level. Today's leading FMCG wholesale enterprises in Palestine are the research targeting group. Starting from current business environment study, supported by theoretical fruits, the researcher believes this thesis conclusion could be valuable for the targeting sector in making strategic decisions.

3.5.2 Reliability

The reliability concerns whether or not a future investigation follows the exact same procedure as described by previous researchers, and that the same research is repeated in the same way resulting in the same findings and conclusions (Yin, K.R, 1994). Reliability depends on the accuracy of the measuring instruments or techniques. Things that can make the reliability low are, for example, wrong samples, problem with standardization in the interviews and problem in interpretations, etc.

To provide a high reliable finding and decrease the negative effect caused by misunderstandings in oral conversation, the researcher recorded the interviews and the information from interviews is sorted again after re-listening to the tape.

The interviewees are specialists who have an extensive knowledge of the enterprise e-business needs. Before the interviews, the researcher sent e-mail, fax or made a phone call to provide information to the interviewees to inform them of the purpose of the study, as well as the result the researcher expected from the interviews. All these efforts increased the effectiveness of the interviews and reduced the chance of interview questions being misunderstood.

3.6 Sampling Design

The highest level of the population for the e-Business Survey was the set of all enterprises which are active at the West Bank in Palestine and which have their primary business activity is in the FMCG sector specified by their wholesale activity. The most important used viewpoints for breakdown of the population in the survey were

1. The economic activity,

2. The geographical distribution territory coverage of the enterprise and

3. The ICT infrastructure readiness.

The survey was carried out as an enterprise survey, i.e. data collection and reporting focuses on the enterprise (rather than on the establishment), defined as a business organization of one or more establishments comprised as one legal unit.

The composition of division groups and their activities in the FMCG industry took into account their economic importance, homogeneity with respect to the analysis of e-business, and the relevance of e-business activities in the FMCG industry.

The sample drawn was a random sample of companies from the FMCG sector population in West Bank in Palestine where the sector was to be surveyed with the objective of fulfilling quota with respect to company size class. Target quota was to include a share of at least 25% of large companies (25+ employees) from the sector and at least 75% of small and medium sized enterprises (1-25 employees).

The surveyed companies were evenly distributed throughout Palestine, but the majority of them are sited in Ramallah, which is the economic center of Palestine and a broader region. Thus, regional bias in the results cannot be excluded.

3.7 The Respondents

The main respondents targeted were the CEO, , general managers, IS executives Chief/ Head of the Information Technology (Information System) - Typically CIO, CTO, CFO and financial specialists (or equivalents for division or subunits) of the different companies. Also in many cases, the respondent was recommended by the chief (head of the department) himself, due to the higher involvement of the employee with the internet related projects of the company.

The questionnaire was sent to 40 CEO's or CIO's in Palestinian FMCG wholesale enterprises selected from the directory of the largest 120 Palestinian FMCG wholesale enterprises which are most likely to represent the structure of the Palestinian FMCG sector.

The survey was performed during May 2005 through verbal communication with CEOs or CIO's (IS executives). Verbal communication with CEO's or CIO's is clearly important since the respondents were not self-selecting the questions and themes. Regarding the sample, proposed methodology, as well as professionalism in planning and conducting the research, the results may be considered as representative.

3.8 Limitations

A choice that has been made is to fully focus on e-business between companies, i.e. B2B e-commerce instead of B2C. The reason for this preference is the important difference between how these two concepts are handled in Palestine. B2C e-business, involves factors characterized by behavioral change among consumers. In, B2C e-business, there is also a clear focus on physical distribution to end consumers which involves a different concept compared to B2B. Moreover, political, economical, technological, cultural and environmental factors are considered barriers to achieving B2C e-business in Palestine. Some listed below restrictions have been made in this thesis regarding e-business:

- First e-business has been chosen as the main subject of the study. Although e-commerce is a main component of e-business but its applicability in Palestine is rather weak, due to the culture and the lack of awareness.

- The second restriction is that mainly e-business between companies has been studied i.e. FMCG Wholesaler to a retailer, which comprises to the implementation of B2B rather than B2C.

- Since Gaza is out of reach due to the current occupation circumstances it will be excluded from the research.

- The link between e-business success and the measurement of organizational operational and change capabilities

- It was not possible to find an official list of the actual number of the companies working in the FMCG industry at any of the official agencies or unions. There was

no record of any kind that sorts them in accordance to their size, economic activity, or financial status.

- An issue – which was known in advance but is unavoidable in telephone interviews – is that it is not always easy to find the right target person.

- In some cases some respondents were contacted after they have submitted the questionnaire to modify conflicted answers generated from miss understanding of order or term. Others were contacted again for missing answers which are not optional to be left as empty answer.

3.8.1 Problems encountered

No major problems were reported during the fieldwork with respect to interviewing (e.g. comprehensibility of the questionnaire, logical structure). On the whole, the fieldwork went relatively smoothly. The questionnaire was logically structured and flowed naturally. Most problems stemmed from the difficulties of conducting research projects among ICT decision-makers in general rather than from any specific defect in design of this project itself. Dedicated ICT professionals are heavily researched and therefore securing their participation can be difficult. This is a particular problem in larger companies.

An issue – which was known in advance but is unavoidable in telephone interviews – is that it is not always easy to find the right target person. Sometimes an MIS manager is not very aware of the consequences of e-business on the whole of the company, on the personnel level and on the financial level. On the other hand, the general manager may not always be aware of the implementation status and technical consequences. Consequently, the respondents were personally

contacted and followed up on several occasions and different times to complete the questionnaire and provide the precise accurate information.

In other cases where there was not an MIS manager in the company and the executive responsible for filling the questionnaire in need of technical terminology and structural help with regards to what they operate and own in the company, the researcher provided a round the clock telephony support and comprehensive discussion and preliminary assessment of the situation of the targeted interviewee to help him/her to complete the questionnaire properly.

In some cases some respondents were contacted after they have submitted the questionnaire to modify conflicted answers generated from miss understanding of order or term. Others were contacted again for missing answers which are not optional to be left as empty answer. All respondents cooperated highly with the researcher to provide the best complete answered questionnaire.

4 SURVEY ANALYSIS AND RESULTS

4.1 Introduction

Despite the increasing number of studies and market research on electronic business, especially on electronic commerce, released by a number of authors and research organizations across the world, there is still a lack of reliable empirical information about the extent, scope, nature of and factors affecting the speed of e-business development in Palestine at the industry level in an internationally comparative framework. This thesis intends to provide such information for the Food, beverages and tobacco industry.

In this chapter, the data, which is obtained from a sample of 40 respondents presented according to the order of the questionnaire. The research makes some comparatives between the data obtained with the context of the study. First companies' profile and sample characteristics factors. Next, responses on readiness and applicability of e-business are presented. All major parts of analysis in the same order of the questionnaire are presented and analyzed using frequency tables and cross tabulations that show the relationship between the different variables defined in the questionnaire.

4.2 Sample Characteristics

4.2.1 Basic Characteristics of the Companies

Table 4-1: Company Size (number of employees) - in Size Classes.

Number of employees	No. of Companies	Valid Percent
1-9	7	17.5
10-49	17	42.5
50-100	10	25.0
101-150	2	5.0
151-200	2	5.0
201+	2	5.0
Total	40	100.0

The sample was characterized according to their number of employees, activities in the market, and several other factors. Company sizes are classified in table 4-1 above, 40% of the companies surveyed stated that employee turnover increased and 17% stated that it decreased. The inventory turnover increased in 50% of the companies surveyed, it only decreased in 20% of them, while the rest don't know the status of their turnover during the last year. 15% of the respondents replied that their share of the market was less than 5%, 12.5% stated that they have a share of 6%-10%, 25% stated that they have a share of 11%-25%, while 47.5% have a larger than 25% share of the market. Estimation of the percentage of employees with a college or university degree in the company is shown in the table below.

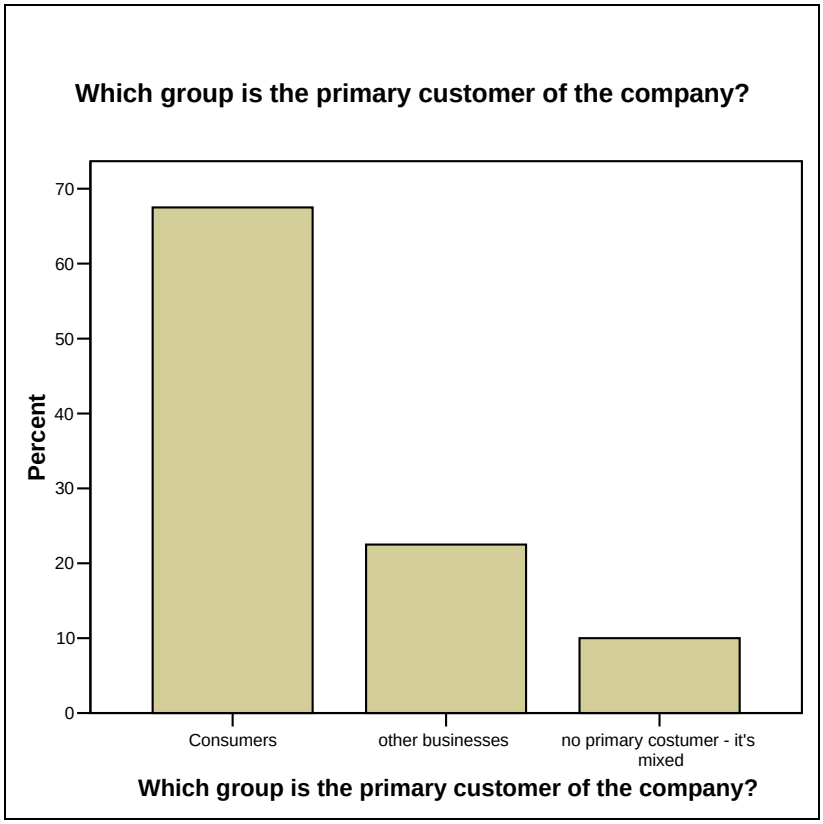
Table 4-2: percentage of employees with a college or university degree in the company.

Percentage of Employees	No. of Companies	Valid Percent
Less than 10%	6	15.0
11%-20%	8	20.0
21%-30%	11	27.5
31%-50%	7	17.5
51%-100%	8	20.0
Total	40	100.0

4.2.2 Primary Customer Groups

In the sample of 40 wholesale enterprises, %67.5 of the sample is dealing with consumer outlets like super markets, stores and so forth. %22.5 is dealing with other businesses like distributors. %10 is dealing with mixed customer base like consumer outlets, other businesses, government and others. As shown in figure 4-1.

Figure 4-1: Primary customer groups.



4.2.3 Company Size and Organizational Structure

%50 of the respondents were a single-site enterprise, %22.5 of the respondents were a national company with 2-10 sites and mixed distribution/manufacturing. Division of a large corporation, and national with 2-10 sites, primarily distribution held %12 of the surveyed sample. Finally Multi-national with 5 sites or more, and mixed distribution/manufacturing (%2.5). These

companies were distributed normally on the West Bank from North to South with apparent concentration in the middle.

4.3 Readiness and Infrastructure

The following section discusses the diffusion of ICT and e-business in the food, beverages and tobacco sector, including information on attitude towards e-business, technical infrastructure, general IT usage and IT skills.

4.3.1 ICT Infrastructure

Diffusion and use of ICT infrastructures in enterprises mirrors the structure of the sector. While the big companies (most of which lead in their markets) are also the companies with the most highly evolved infrastructures, smaller businesses normally "lag behind" when it comes to ICT.

Table 4-3 illustrates how company size corresponds to use of ICT infrastructures. The personal computer is the most commonly used tool (100% of the businesses surveyed use it). 95% of enterprises have access to the Internet, but the percentage of enterprises using the web (mainly for searching information) is slightly lower based on the interviews. The most commonly used network applications are the Internet (95%) and e-mail (100%). Less common network tools are LANs (80%), Intranets (30.0%), WAN networks (17.5%) and Extranets (15%).

Table 4-3: Usage of IT infrastructure according to size classes.

		Company Size (number of employees) - in Size Classes						Total
		1-9	10-49	50-100	101-150	151-200	201+	
Computers	Yes	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%
	Total	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%
Access To The Internet?	Yes	15.0%	40.0%	25.0%	5.0%	5.0%	5.0%	95.0%
	No	2.5%	2.5%					5.0%
Management Information System Department	Yes		12.5%	10.0%	2.5%	5.0%	2.5%	32.5%
	No	17.5%	30.0%	15.0%	2.5%		2.5%	67.5%
Company Website	Yes	10.0%	25.0%	17.5%	2.5%	5.0%	5.0%	65.0%
	No	7.5%	17.5%	7.5%	2.5%			35.0%
Update Of Information On The Website On A Constant Basis	Yes	10.0%	17.5%	12.5%	2.5%	2.5%	5.0%	50.0%
	No	7.5%	25.0%	12.5%	2.5%	2.5%		50.0%
E-Mail	Yes	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%
Local Area Network (LAN)	Yes	15.0%	30.0%	20.0%	5.0%	5.0%	5.0%	80.0%
	No	2.5%	12.5%	5.0%				20.0%
Wide Area Network (WAN)	Yes	2.5%	2.5%	7.5%		2.5%	2.5%	17.5%
	No	15.0%	40.0%	17.5%	5.0%	2.5%	2.5%	82.5%
Intranet	Yes	2.5%	12.5%	10.0%		2.5%	2.5%	30.0%
	No	15.0%	30.0%	15.0%	5.0%	2.5%	2.5%	70.0%
Extranet	Yes	2.5%	7.5%	5.0%				15.0%
	No	15.0%	35.0%	20.0%	5.0%	5.0%	5.0%	85.0%
	Total	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100%

The table 4-4 below illustrates the dimension of adoption of ICT different infrastructure components by companies that were not compatible with the complete readiness package for e-business. 35% of the respondents are planning to deploy there own MIS department within the 18 months, 20% within months, while 5% are planning to deploy it within 6 months. The results show that only 5% respondents don't have access to the internet 2.5% of them will have an access to the internet within the next 6 months and the other 2.5% will have it ready within 12 months. 10% only of the respondents who don't have a website will build their own website in 6 months and 7.5% within 12 months while the majority will have it ready in 18 months or so. Having a LAN on

site is a plan of 10% to be built in 6 months, another 2.5% expressed that they are going to have there own LAN within 12 months and 5% with will have it in 18 months. 40% of the respondents didn't know when they are going to build a WAN in there companies but 22.5% stated that they are going to have a WAN within the next 18 months which means that they are expanding into other sites or branches. 42.5% also didn't know when are they going to implement their own intranet and 62.5% didn't know when are they going to have their extranet. While 25% and 20% are going to have their intranet and extranet ready respectively within the next 18 months.

Table 4-4: Availability of ICT infrastructure in the enterprise in the near future.

	If the Answer is **NO**, when would you think that you will present it in the company?			
	6 Months	12 Months	18 Months	Don't Know
Does the enterprise use computers?	-	-	-	-
Does the company have a Management Information System Department?	%5	%20	%35	%7.5
Does the company have access to the internet?	%2.5	%2.5	-	-
Does the company have a website?	%10	%7.5	%15	%2.5
Does the company update information on the website on a constant basis?	%17.5	-	%5	%25
Does the company use e-mail?	-	-	-	-
Does the company use a Local Area Network (LAN)?	%10	%2.5	%5	%2.5
Does the company use a Wide Area Network (WAN)?	%5	%15	%22.5	%40
Does the company use an intranet?	-	%2.5	%25	%42.5
Does the company use an extranet?	-	%5	%20	%62.5

Companies access the Internet mainly via ISDN (mentioned by 10% of all companies with Internet access) and/or an analogue modem (52.5%). while the analogue modem and ISDN are still commonly used the most in SMB's (52.5%), (10%) respectively. 20% of companies use DSL. Finally, 12.5% of respondents stated that they used another type of permanent connection, while 5% use other types of connection.

Table 4-5: Type of Internet connection

Company accesses the internet via…	Company Size (number of employees) - in Size Classes						Total
	1-9	10-49	50-100	101-150	151-200	201+	
analogue dial up modem	10.0%	25.0%	10.0%	5.0%		2.5%	52.5%
ISDN	2.5%	5.0%	2.5%				10.0%
DSL, such as ADSL	2.5%	7.5%	7.5%		2.5%		20.0%
other fixed connection	2.5%		5.0%		2.5%	2.5%	12.5%
Don't Know		5.0%					5.0%
Total	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%

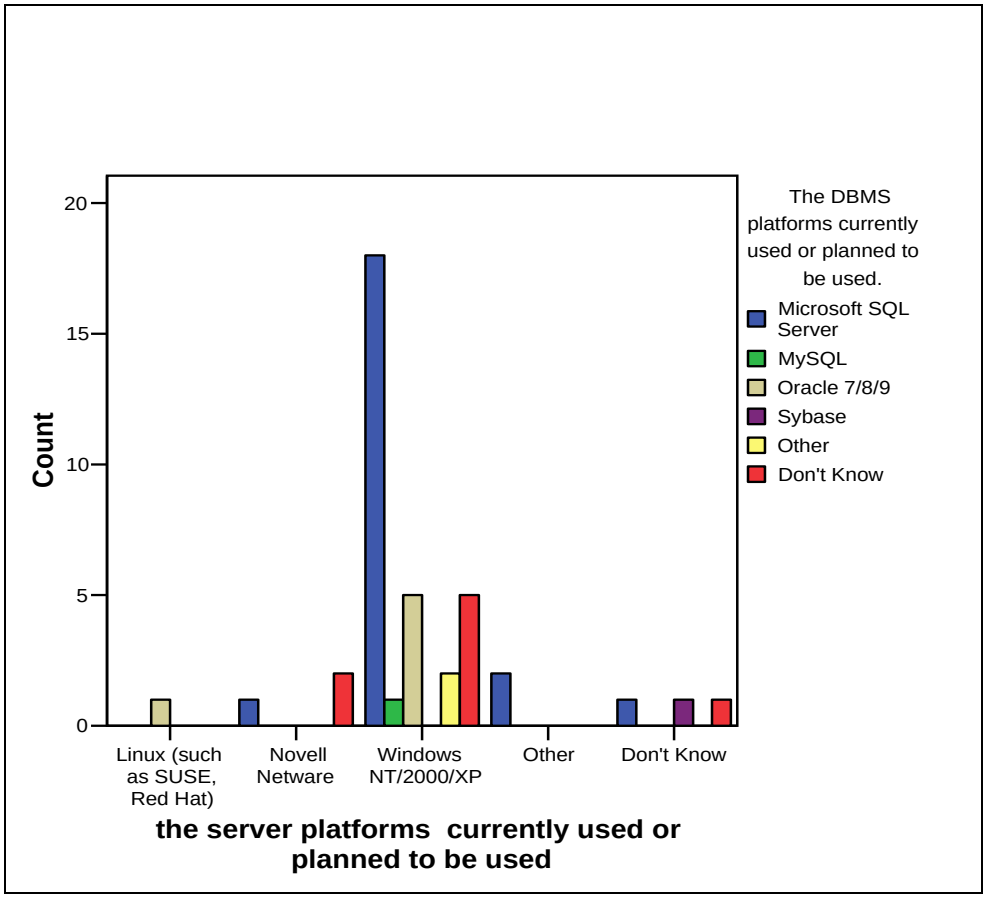
One major part of the ICT readiness is the availability of network servers and database servers that holds the application and provides several IT services for the clients in the company, the table below shows the availability of the different types of servers by vendor, followed by a figure to illustrate the availability of database servers in relation to the network.

Table 4-6: server platforms you currently use or plan on using.

Please indicate the server platforms you currently use or plan on using (select all that apply).		Company Size (number of employees) - in Size Classes						Total
		1-9	10-49	50-100	101-150	151-200	201+	
Linux (such as SUSE, Red Hat)	Count	0	0	1	0	0	0	1
	% of Total	.0%	.0%	2.5%	.0%	.0%	.0%	2.5%
Novell Netware	Count	0	1	1	1	0	0	3
	% of Total	.0%	2.5%	2.5%	2.5%	.0%	.0%	7.5%
Windows NT/2000/XP	Count	5	14	7	1	2	2	31
	% of Total	12.5%	35.0%	17.5%	2.5%	5.0%	5.0%	77.5%
Other	Count	1	0	1	0	0	0	2
	% of Total	2.5%	.0%	2.5%	.0%	.0%	.0%	5.0%
Don't Know	Count	1	2	0	0	0	0	3
	% of Total	2.5%	5.0%	.0%	.0%	.0%	.0%	7.5%
Total	Count	7	17	10	2	2	2	40
	% of Total	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%

The following figure illustrates the relation between the network server operating system and the database installed on the network, as we can see here that Microsoft has had the most apparent presence in the Palestinian market since it is the most affordable and easy to get servers.

Figure 4-2: availability of Database servers vs. network servers.



4.4 IT Skills

The success of e-business and other ICT technologies depends not only on availability of adequate technologies to enterprises, but also on the presence of specialized personnel with the skills needed to access and use the technologies. Interviews attempted to assess to what extent employees accessed and made use of various ICT applications. As shown in Table 4-7, 65.4% of the enterprises surveyed stated that the majority of their employees normally use e-mail for external communications, while 65.8% stated that their employees use e-mail for communication within the company. 52.7% have access to the World Wide Web, leaving only 44% of the

enterprises stating that most of their employees had access to Intranet networks. Many companies have e-mail policies to avoid usage of e-mail, Internet etc for other than business purposes.

Broken down by company size (Table 4-7), a certain amount of "polarization" in the sector can be observed. On the one hand, a very high percentage of large companies (with over 201+ employees) state that the majority of their employees can access various ICT applications, while on the other, the percentage of smaller companies (less than 50 employees) whose employees have access to ICT is very moderate.

Table 4-7: Employees' access to ICT according to size classes.

Company accesses the internet via…	Company Size (number of employees) - in Size Classes					
	1-9	10-49	50-100	101-150	151-200	201+
Access to e-mail for internal communication	56%	28.5%	64.5%	81%	88%	77%
Access to e-mail for external communication	62%	45.0%	68%	77%	75%	56.5%
Access to the www	55%	40.5%	66%	67%	40%	48%
Access to the intranet	33%	10%	41.0%	52%	68.5%	60%
Computation base: all enterprises.						

The survey also attempted to assess the percentage of enterprises that encourage their employees to acquire specialization in use of the personal computer and network computer technologies. As Table 4-8 reveals, 57.5% of the enterprises responded affirmatively. When it comes to training tools offered by businesses, the interviews revealed that 59.3% of enterprises stated that their employees could invest some of their working hours in learning, while 29.2% make use of specific training courses offered externally, and 8.5% of enterprises held in-house computer and information technologies courses.

Table 4-8: IT training offered to employees.

		Company Size (number of employees) - in Size Classes						Total
		1-9	10-49	50-100	101-150	151-200	201+	
Does the company offer its employees computer or IT training?	Yes	15.0%	22.5%	12.5%		2.5%	5.0%	57.5%
	No	2.5%	20.0%	12.5%	5.0%	2.5%		42.5%
Total		17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%
Where does the company offer its employees this training?	in-house		4.2%				4.2%	8.3%
	IT training offered by third parties	16.7%	12.5%					29.2%
	Both	8.3%	25.0%	20.8%		4.2%	4.2%	62.5%
Total		25.0%	41.7%	20.8%		4.2%	8.3%	100%

Finally, the enterprises surveyed were asked to assess the importance of the learning method in development of specialization in information technologies in the enterprise. In particular, the interviewees were given a list of learning methods, to be assigned a score from 1 (for items considered very important) to 4 (for items not considered important). Taking into account the percentage of businesses which responded with "very important" or "quite important" (see table 4-9), the learning method judged most important by the sample interviewed (REB1, REB2, REB3… REB10) was learning on the job, mentioned by 80% of companies using personal computers. Self-learning by employees followed (mentioned by 70% of respondents), while formal training schemes (such as courses and seminars) are considered most important by 30% of the enterprises surveyed.

Table 4-9: Importance of different training schemes for IT skills development (% of enterprises rating

learning method	Total%
On-the-job learning	80%
Formal training schemes	30%
Self-learning activities of employees	70%
Computation base: enterprises using computers. Note: Weighted by number of enterprises ("% of enterprises")	

4.5 Usage and Impact

This section looks at the e-business activities of companies operating in the food, beverage and tobacco industry and their impact on company organization. Specifically, the following sections will look at use of the Internet site by companies in the industry, while sections assess the situation of e-commerce for sales and procurement and use of specific e-business solutions.

Finally, we will look at barriers to growth of e-commerce (assessing their importance) and the impact of e-commerce on various aspects of company management. Based on selected survey results this section provides the first empirical evidence for the qualitative findings of the role of ICT and e-business.

4.5.1 Usage of a Website

The survey revealed that 65% of the enterprises interviewed have their own Internet site. As table 4-10 reveals that, of the sample, 7.5% plan to create websites within the next 12 months.

If these results are broken down by size class it is clear that the percentage of companies with a website increases with company size. 35% of small enterprises (with less than 50 employees) have a website, 25% of medium-sized companies (with 50 to 200 employees) and fully 5% (total population of the class 2 companies) of large enterprises (with over 201+ employees).

The number of small businesses stating that they intend to have a website within the next 12 months is significant, is however (7.5%).

Table 4-10: Percentage of companies having a website on the Internet planning to have a website.

Does the company have a website?		Company Size (number of employees) - in Size Classes						Total
		1-9	10-49	50-100	101-150	151-200	201+	
Yes	Count	4	10	7	1	2	2	26
	% within Does the company have a website?	15.4%	38.5%	26.9%	3.8%	7.7%	7.7%	100.0%
	% within Company Size (number of employees) - in Size Classes	57.1%	58.8%	70.0%	50.0%	100.0%	100.0%	65.0%
	% of Total	10.0%	25.0%	17.5%	2.5%	5.0%	5.0%	65.0%
No	Count	3	7	3	1	0	0	14
	% within Does the company have a website?	21.4%	50.0%	21.4%	7.1%	.0%	.0%	100.0%
	% within Company Size (number of employees) - in Size Classes	42.9%	41.2%	30.0%	50.0%	.0%	.0%	35.0%
	% of Total	7.5%	17.5%	7.5%	2.5%	.0%	.0%	35.0%
Total	Count	7	17	10	2	2	2	40
% within Does the company have a website?		17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%
% within Company Size (number of employees) - in Size Classes		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%

If the Answer is **NO**, when would you think that you will present it in the company? (*in total*)	6 Months	12 Months	18 Months	Don't Know
Does the company have a website?	%10	%7.5	%15	%2.5

4.5.2 E-Commerce for Sales and Procurement

4.5.2.1 Selling Online

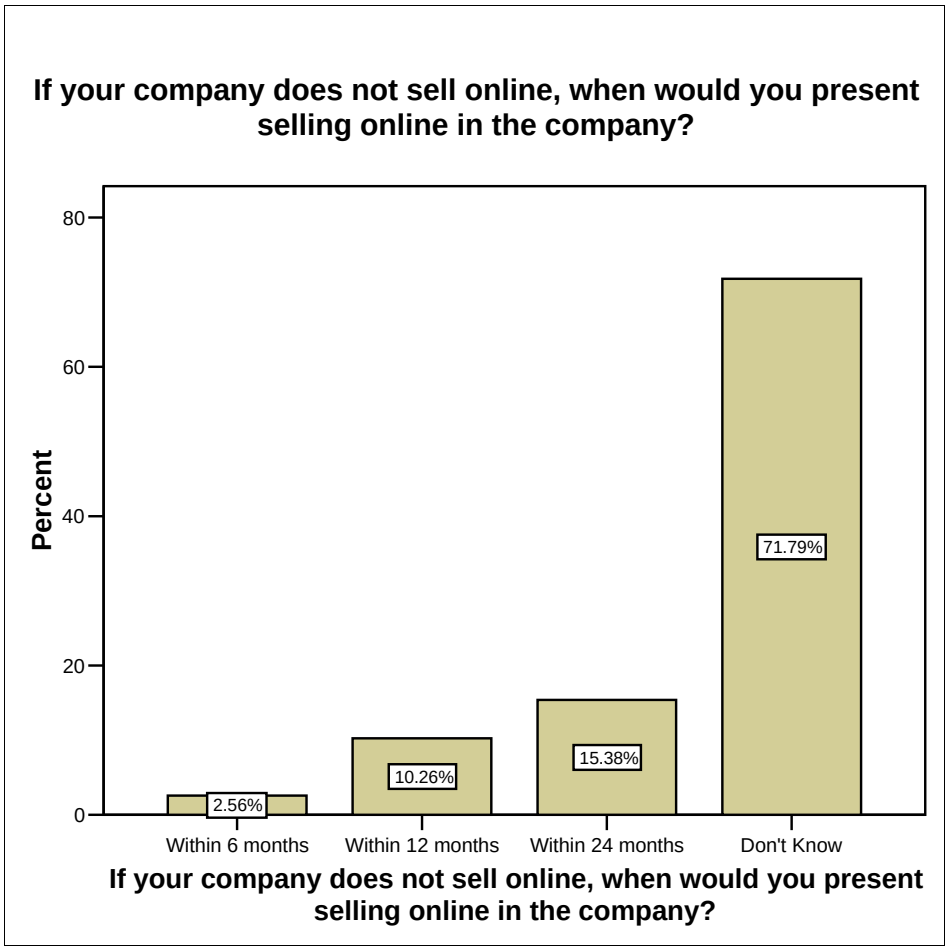
Table 4-11 illustrates use of selling online in the food, beverage and tobacco industry. It demonstrates that only 17.5% of enterprises in the industry currently have an online selling system in place. At the national level, 7.5% use this sales method on their own company website, 10% sell online through other distributions channels, while 82.5% don't sell online.

Table 4-11: Enterprises selling online.

Does the company sell goods or services on the Internet through any of the following:	Frequency	Percent	Valid Percent
use an own company web site for selling online	3	7.5	7.5
other online distribution channels	4	10.0	10.0
The company does not sell goods or services on the Internet	33	82.5	82.5
Total	40	100.0	100.0

Although it is true that only a small number of companies sell online, a notable 10.26% of the enterprises surveyed planned to begin selling online within the next twelve months. 2.56% within the next six months, and 15.38% within the next 18 months. But 71.79% don't know when are they going to present selling online in there companies.

Figure 4-3: expected time frame to present selling online.

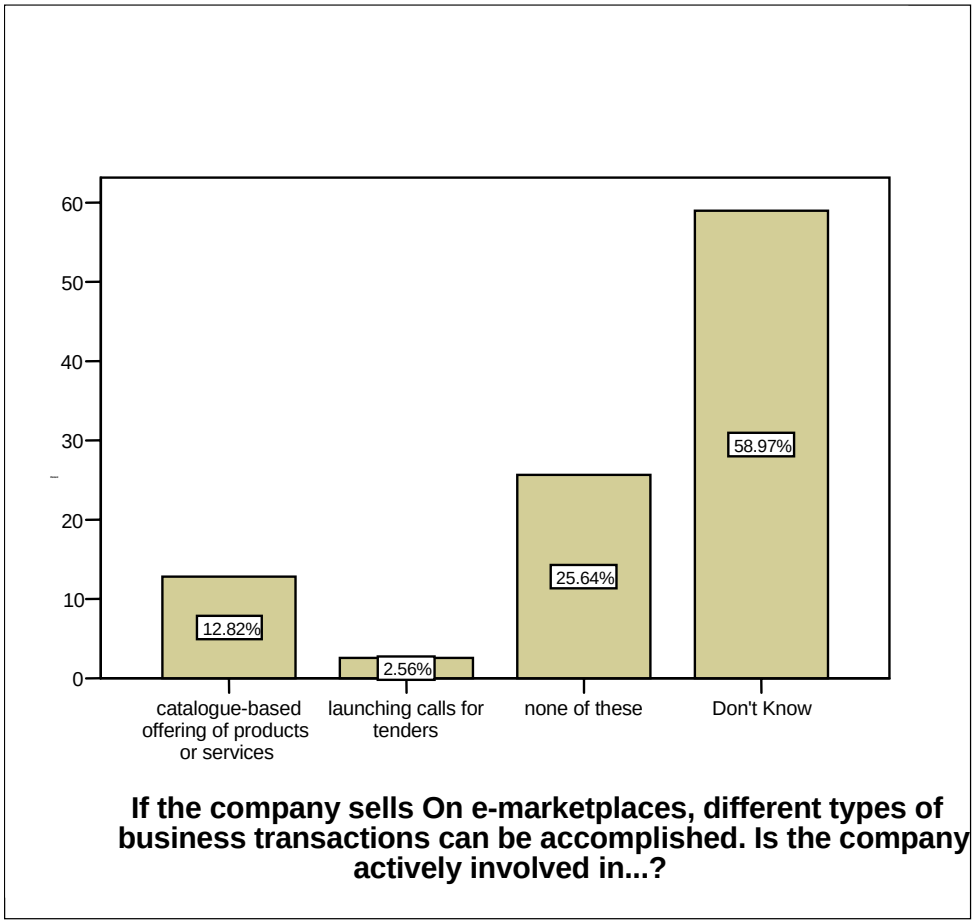


Of those companies which do sell online, 2.5% have done so for more than 2 years, while 2.5% have been selling online for less than 2 years and 5% have been selling online for less than a year. The majority (42.9%) of enterprises which sell online use their own website as a distribution platform, many also use marketplaces (mentioned by 15.4% of the enterprises with selling online). On the other hand, 71.79% replied that they are not aware of the practice or they don't know the answer of the question.

4.6 Usage of Specific E-Business Solutions

First, an attempt was made to estimate the enterprises' participation in various B2B initiatives and marketplaces present in the sector. Only 15.38% of the sample surveyed stated that they sell their products through marketplaces or other B2B initiatives. While the number of participating enterprises is quite small, it is important to take a closer look at marketplace activities, as the phenomenon is seen as important by enterprises in the sector; this is confirmed by the 40% of interviewees (REB2, REB4, REB7, and REB9). The types of activities enterprises participating in marketplaces are primarily involved in are the offering of products in catalogues (cited by 61.6% of participating enterprises). Other activities are: participation in calls for tender (mentioned by 12.82% of participating enterprises), announcing calls for tender to purchase there needs (2.56%), and the rest don't use any of the known methods or don't know the answer (see figure 4-4).

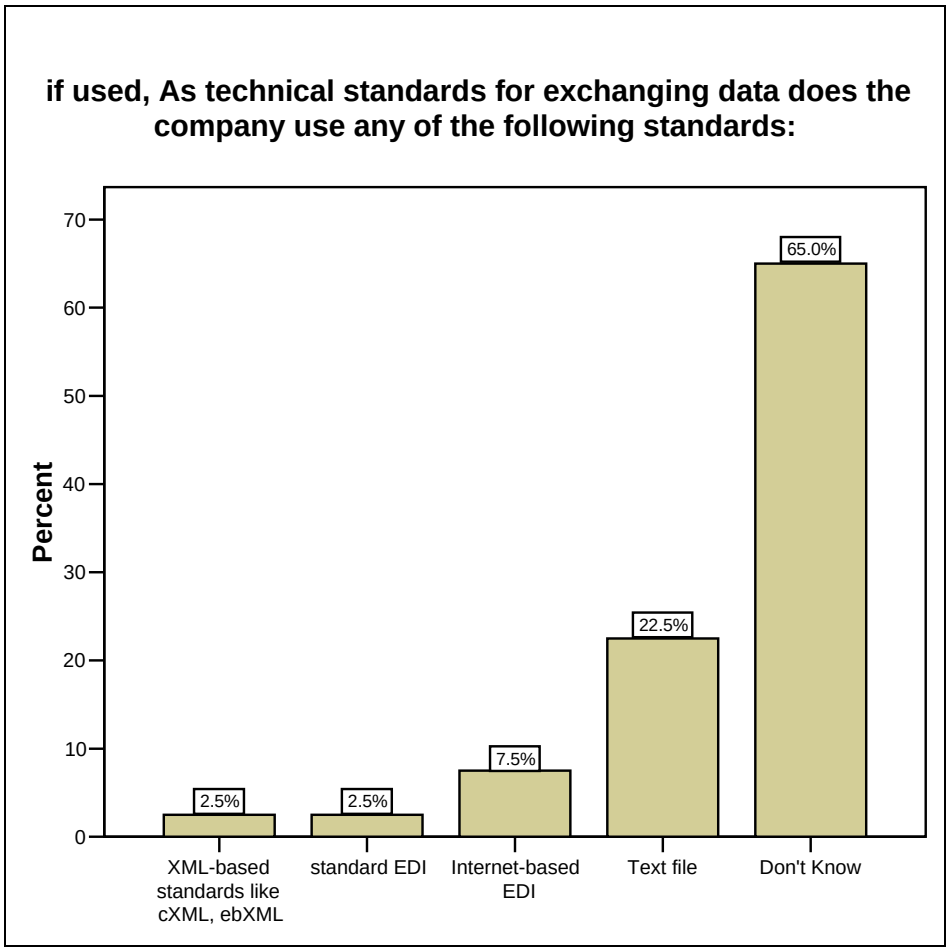
Figure 4-4: Typology of e-marketplace activity.



While more advanced solutions have languished, simple electronic mail (e-mail) has emerged as a kind of (ICT) "killer application", particularly for SMEs, as a simple, cheap and rapid means of communication. E-mail differs from EDI in its unstructured format, (documents exchanged via EDI have a predefined structured form), which can be both an advantage and a disadvantage. A clear advantage of e-mail is that it is so easy that virtually everybody can use it; SMEs do not need to employ specially trained personnel to send and receive e-mails, which is not the case for some of the more sophisticated applications.

EDI was one of the early network applications. It was introduced to manage the connections between enterprises (with electronic mail), thus reducing the invoicing and operating costs of ordering. The EDI system connects the computers at the producer's facilities directly with the distribution chain, creating efficiencies by eliminating printed documents and decreasing time dedicated to the "order-delivery-invoicing" procedure. However, the spread of EDI systems has not been equally fast across the industry. The majority (65%) of respondents don't know the method they use to exchange data online. But the majority of those who know 22.5% use text files through email to exchange data, 7.5% use internet-base EDI as a standard, and 2.5% use standard EDI while the rest 2.5% use XML.

Figure 4-5: E-commerce channels used for online sales.



Finally, an attempt was made to determine the current (and planned) level of usage of the principal solutions intended specifically for e-business, including SCM, CRM, Knowledge Management Solutions, ERP and E-Commerce. The degree of penetration of applications of this kind is on the whole still low (the percentage of companies using them is in most cases less than 5% of the sample) but is on the rise.

4.6.1.1 Supply Chain Management (SCM)

SCM is in an embryonic phase, but presents significant opportunities. After re-engineering internal processes to increase efficiency, large companies (especially in the food and beverage sector) have attempted to increase their competitive advantage by achieving inter-organizational goals, such as decreasing time-to-market and distribution costs.

In the process, companies are reshaping relationships with their suppliers, producers, distributors, retail stores and customers. SCM projects move toward integration of these processes throughout the complete supply chain from receiving the order to procurement and from production to delivery.

The survey yielded that 17% SCM implementations were found operational in the market and 82.5% did not adopt SCM. As illustrated in the table below, the companies which did not adopt SCM will manage to adopt it as of 33.3% within the next 24 months. But the majority 48.5% will adopt it within the next three years.

Table 4-12: Usage of special e-business solutions - SCM system - in Size Classes.

Has the company implemented an SCM that is a Supply Chain Management system?		Company Size (number of employees) - in Size Classes						Total
		1-9	10-49	50-100	101-150	151-200	201+	
Yes	Count	1	3	1	1	0	1	7
	% of Total	2.5%	7.5%	2.5%	2.5%	.0%	2.5%	17.5%
No	Count	6	14	9	1	2	1	33
	% of Total	15.0%	35.0%	22.5%	2.5%	5.0%	2.5%	82.5%
Total	Count	7	17	10	2	2	2	40
	% of Total	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%

Table 4-13: Usage of special e-business solutions - SCM system - in time of adoption

Has the company implemented an SCM that is a Supply Chain Management system?		Has the company implemented an SCM that is a Supply Chain Management system?				Total
		6 Months ago	12 Months ago	24 Months ago	36 Months ago	
Yes	Count	1	2	3	1	7
	% of Total	14.3%	28.6%	42.9%	14.3%	100.0%
Total	Count	1	2	3	1	7
	% of Total	14.3%	28.6%	42.9%	14.3%	100.0%
No	Count	2	4	11	16	33
	% of Total	6.1%	12.1%	33.3%	48.5%	100.0%
Total	Count	2	4	11	16	33
	% of Total	6.1%	12.1%	33.3%	48.5%	100.0%

4.6.1.2 Customer Relationship Management (CRM)

An emerging customer-centered approach and the spread of concepts such as "segment by one" and "mass customization" have encouraged some of the larger companies to implement Customer Relationship Management. Primarily, CRM is a strategy and an operating method aimed at improving and expanding the connection with the customer with the aim of generating new business opportunities through customer retention.

CRM system implementations mostly involve customer contact points with the company in: sales, marketing, trade assistance services, order management, distribution and delivery.

Typically, the first areas tackled in implementing CRM are automation of the sales force and call center management. CRM systems offer new specialized applications, but also use or reuse investments already made in structures such as Helpdesks and Websites, redirecting them to meet CRM needs. Thus the service component is still more important than the software application component.

As shown in table 4-14 below 37.5% of the companies implemented CRM and 62.5% are planning to implement CRM within the coming three years. 32% equally within 12 months and 24 months. Comprising to a better awareness of the market and customer needs in terms of customer focus and serviceability.

Table 4-14: Usage of special e-business solutions - CRM system - in Size Classes

Has the company implemented a CRM that is a Customer Relationship Management system?		Company Size (number of employees) - in Size Classes						
		1-9	10-49	50-100	101-150	151-200	201+	Total
Yes	Count	4	6	4	0	0	1	15
	% of Total	10.0%	15.0%	10.0%	.0%	.0%	2.5%	37.5%
No	Count	3	11	6	2	2	1	25
	% of Total	7.5%	27.5%	15.0%	5.0%	5.0%	2.5%	62.5%
Total	Count	7	17	10	2	2	2	40
	% of Total	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%

Table 4-15: Usage of special e-business solutions - CRM system - in time of adoption.

Has the company implemented a CRM that is a Customer Relationship Management system?		Has the company implemented a CRM that is a Customer Relationship Management system?				Total
		6 Months ago	12 Months ago	24 Months ago	36 Months ago	
Yes	Count	3	4	3	5	15
	% of Total	20.0%	26.7%	20.0%	33.3%	100.0 %
Total	Count	3	4	3	5	15
	% of Total	20.0%	26.7%	20.0%	33.3%	100.0 %
No	Count	2	8	8	7	25
	% of Total	8.0%	32.0%	32.0%	28.0%	100.0 %
Total	Count	2	8	8	7	25
	% of Total	8.0%	32.0%	32.0%	28.0%	100.0 %

4.6.1.3 Knowledge Management (KM)

One area in which interest is growing is Knowledge Management (KM). There is some uncertainty as to how Knowledge Management may be defined; KM is an interdisciplinary area ranging from psychology to organization theory and specific technologies such as document management, workflow tools and expert systems. Many scholars and practitioners have recognized the importance of KM for learning organizations to gain a competitive edge in recent years. The technologies supporting KM include technological infrastructures for storage and transmission of information and know-how (such as client/server networks, databases, Data Warehouses, etc.) and tools for sharing information (such as e-mail, Document Manager, Document Imaging and Workflow systems). KM is still a relatively small business, but it is growing rapidly, especially in larger corporations.

As illustrated in the table 4-16 below only 22.5% adopted KM as part of there e-business strategy. But 77.5% of the sample will be adopting KM later on, 41.9% of those who will adopt

KM in the future chose to adopt it within 36 months. On the other hand, 29% indicated that they are going to adopt it within 24 months.

Table 4-16: Usage of special e-business solutions - KM system - in Size Classes

Has the company implemented a special Knowledge Management software solution?		Company Size (number of employees) - in Size Classes						Total
		1-9	10-49	50-100	101-150	151-200	201+	
Yes	Count	2	4	2	0	1	0	9
	% of Total	5.0%	10.0%	5.0%	.0%	2.5%	.0%	22.5%
No	Count	5	13	8	2	1	2	31
	% of Total	12.5%	32.5%	20.0%	5.0%	2.5%	5.0%	77.5%
Total	Count	7	17	10	2	2	2	40
	% of Total	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%

Table 4-17: Usage of special e-business solutions - KM system - in time of adoption.

Has the company implemented a special Knowledge Management software solution?		Has the company implemented a special Knowledge Management software solution?				Total
		6 Months ago	12 Months ago	24 Months ago	36 Months ago	
Yes	Count	4	2	1	2	9
	% of Total	44.4%	22.2%	11.1%	22.2%	100.0%
Total	Count	4	2	1	2	9
	% of Total	44.4%	22.2%	11.1%	22.2%	100.0%
No	Count	2	7	9	13	31
	% of Total	6.5%	22.6%	29.0%	41.9%	100.0%
Total	Count	2	7	9	13	31
	% of Total	6.5%	22.6%	29.0%	41.9%	100.0%

4.6.1.4 Enterprise Resource Planning (ERP)

The relatively high percentage of companies currently using integrated management system (ERP) is not surprising, because the costs are moderate to medium-high with respect to the company size and because the major software manufacturers have begun to develop solutions for small and medium-sized enterprises few years ago tailored to this industry in specific.

However, adoption of integrated management systems will emerge as a trend in the coming years as the major ERP suppliers create extended ERP solutions for small and medium-sized businesses, opening up new prospects for those companies with the capital available to invest.

Up to now, this sector has shown a particular interest in ERP. Since companies are under continuous pressure to optimize internal processes and to integrate them with those of customers and suppliers. Integration is stimulated through the optimization of partner relationships, especially with partners from the retail and distribution network.

The functionalities of ERP systems are integrated by means of specific sector utilities, for example management of returns, handling recyclable packaging, handling with double independent units of measurement or recipe management.

Not surprisingly the percentage of adoption of ERP in the FMCG industry in Palestine has reached to 100%. This implies that all the companies in the industry have their own e-business initiative for a complete e-business strategy.

Table 4-18: Usage of special e-business solutions - ERP system - in time of adoption.

Has the company implemented an ERP that is Enterprise Resource Planning solution?		Has the company implemented an ERP that is Enterprise Resource Planning solution?				Total
		6 Months ago	12 Months ago	24 Months ago	36 Months ago	
Yes	Count	4	5	13	18	40
	% of Total	10.0%	12.5%	32.5%	45.0%	100.0%
Total	Count	4	5	13	18	40
	% of Total	10.0%	12.5%	32.5%	45.0%	100.0%

4.6.1.5 E-Commerce

The relatively low percentage (5%) of companies currently using E-Commerce is not surprising, because the costs are high in implementing the strategy with respect to the company size and because there are major barriers of online transactions to take place in Palestine.

Table 4-19: Usage of special e-business solutions - EC system - in time of adoption.

Has the company implemented an E-commerce solution to sell online?		Has the company implemented an E-commerce solution to sell online?	Total
		12 Months ago	
Yes	Count	2	2
	% of Total	100.0%	100.0%
Total	Count	2	2
	% of Total	100.0%	100.0%

Table 4-20: Usage of special e-business solutions - EC system - in expected time for implementation.

Has the company implemented an E-commerce solution to sell online?		Has the company implemented an E-commerce solution to sell online?			Total
		12 Months	24 Months	36 Months	
No	Count	5	1	32	38
	% of Total	13.2%	2.6%	84.2%	100.0%
Total	Count	5	1	32	38
	% of Total	13.2%	2.6%	84.2%	100.0%

4.7 Barriers to E-Commerce

In order to understand barriers to e-commerce in the food, beverage and tobacco sector (and, especially, to assess their importance), interviewees were asked to express their agreement with a series of statements regarding procurement online and selling online, on a scale of 1 (agree completely) to 4 (don't agree at all).

4.7.1.1 Selling Online

Given the percentages of enterprises stating that they agreed completely or somewhat with the above statements, it may be deduced that interviewees see the principal barrier to online sales as the fact that many of the products they sell are not suitable for online sale (a factor mentioned by 80% of the interviewed sample (respondents to E-Business (REB) 1, 2, 3, 5, 6, 7, 8, 9)), a complete list of the interviewees is provided in appendix 1. Other barriers seen as important relate to data confidentiality and security (a factor cited by 75% of interviewees), and that few of their customers have online access the interviewees (REB 1, 5, 7, 8, 9) (50%); cultural barriers within the enterprises constitute another hurdle (cited by 60% of enterprises stated by (REB 1, 2, 5, 7, 8, 9)). Barriers seen as less important include the cost of the technology (cited by 45% of the sample), problems in the delivery process (95%) stated by interviewees (REB 1 to 10) and payment procedures for online orders (100%) of the interviewees (REB 1 to 10). Cultural resistance to change seems to be a greater hurdle in Palestine, while biggest problem is the small number of customers with online access.

As shown in table 4-21, when respondents were asked if customers can pay online or not 67.5% stated that customers cannot pay online for goods and services that they would buy. And this is one of the major obstacles in the way of applying a complete functional front to back end e-business in this industry.

Table 4-21: Barriers to selling online -n online payment.

Can customers also pay online for the goods or services they have ordered?	Frequency	Valid Percent
Yes	6	15.0%
No	27	67.5%
Don't Know	7	17.5%
Total	40	100.0%

4.8 Success of E-Business

Other factors that play a major role in the success or failure of the e-business strategy or initiative are the standardization issues that should be considered a policy regulator and an organizational barrier to adopting e-business in the industry.

77% of the respondents were concerned with security issues, relatively 75% of them were concerned with data protection and privacy. These two factors are the most vulnerable issues that affect the adoption of e-business and they are the key success factors to e-business success in the enterprise. While cataloging and classification (40%) play a random selective role by the enterprise for the way products and services would be offered online, this is critical since this is been used to be implemented by sales representatives in the field which increases the percentage of the chance to sell using the effects of the personal interview and sales skills of the representative in persuading the customer to buy the product, while online this point is missing which means a less chance to close the deal with the target sales forecast. Business messaging or transaction processing was a concern of 55% of the respondents since one of the issues is that they can't trust if the online client or user would be capable to accommodate with the application know how or the procedure of the transaction to be applied to fulfill it. So the level of computer literacy of the user or client is a dependent variable in this formula. About 17% of the respondents were concerned with other factors like political and economic factors that would be a great barrier to adopt the e-business

strategy while only 5% didn't know the answer to this question since they are not aware of the exact consequences that would be tolerated by adopting e-business.

Table 4-22: Critical success standardized issue to e-business.

	Frequency	Valid Percent
security	31	77.5
Data protection and privacy	30	75
cataloguing and classification issues	16	40
other	7	17.5
Don't Know	2	5

On the other hand, 70% of the respondents stated that the size of the company is irrelevant to gaining benefits from e-business activities. And 60% assured that e-business technologies are not too expensive to implement and these two are major indicators that adoption of e-business is a direction of most companies in the industry regardless of the size or the amount of affordable investment. ICT and computer literacy was a factor that affects the timing of adoption as part of the readiness for 70% of the companies surveyed, this is due to the fact that they see that the technology is too complicated. Again from a different perspective the security issue is raised by 52.5% to play a role in the internal security as well as the external depending on the level of external exposure of data and information.

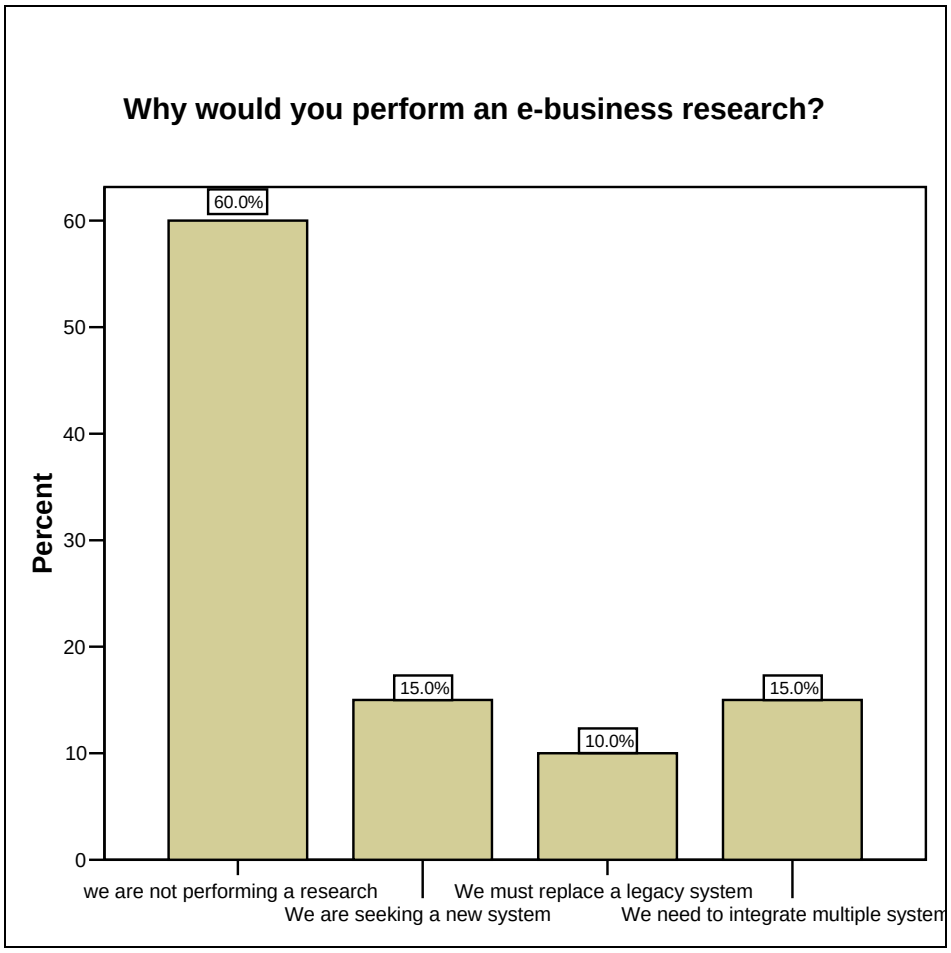
Table 4-23: Important reasons for e-business not to play a role in the company - Barriers for adoption.

		Frequency	Valid Percent
The company is too small to benefit from any e-business activities	Yes, Important	12	30.0
	No, Not important	28	70.0
E-business technologies are too expensive to implement	Yes, Important	16	40.0
	No, Not important	24	60.0
The technology is too complicated	Yes, Important	12	30.0
	No, Not important	28	70.0
We are too concerned about security issues	Yes, Important	21	52.5
	No, Not important	19	47.5

4.9 E-Business Research

60% of the respondents stated that they are not in search of an e-business since they already have there own initiative for e-business or they already have their e-business. 15% of the respondents are not satisfied with the current system that they have. 10% still have a legacy system in place that must be replaced with a complete or partial e-business suit. While 15% of the respondents needed to integrate the available e-business applications that they are using in the enterprise.

Figure 4-6: reasons for adopting a new e-business suite.



4.10 Impact of E-Business

E-business could have an impact on a large number of elements contributing to company management. This section looks at the impact of e-business in terms of its impact on the processes and structures of enterprises in the food, beverage and tobacco sector. The section closes with a look at expectations for future investment in e-business technologies planned by companies in the sector.

4.10.1 Organizational Aspects

The next step is assessing the impact of e-business on internal processes. According to the survey results, 30% of the enterprises surveyed do not yet see e-business as important for their companies, while 70% of the sample expressed skepticism regarding the importance of e-business. Above all, it is worth noting that almost 30% of enterprises did see e-business as important in some ways.

As for impact on company organization, the survey revealed (see tables below) that the percentage of interviewees stating that e-business has significantly changed their company's processes (50%) and structure (40%) is high on the whole. And yet we must not neglect the 52.5% and 35% of interviewees who consider the change significant from the point of view of customer relations and the offer of products/services.

It is also worth noting how smaller companies (with under 50 employees) state that e-business has significantly changed their organization when it comes to customer relations, while for large companies (with over 250 employees) the impact of e-business is significant also in the area of organization

Table 4-24: Impact of e-business on the organizational structure

Effect of e-business on the organizational structure of your company		Company Size (number of employees) - in Size Classes						Total
		1-9	10-49	50-100	101-150	151-200	201+	
has changed significantly	Count	3	8	3	1	0	1	16
	% of Total	7.5%	20.0%	7.5%	2.5%	.0%	2.5%	40.0%
has changed somewhat	Count	2	7	5	1	2	1	18
	% of Total	5.0%	17.5%	12.5%	2.5%	5.0%	2.5%	45.0%
has not changed	Count	2	2	2	0	0	0	6
	% of Total	5.0%	5.0%	5.0%	.0%	.0%	.0%	15.0%
Total	Count	7	17	10	2	2	2	40
	% of Total	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%

Table 4-25: Impact of e-business on the internal work processes.

Effect of e-business on internal work processes		Company Size (number of employees) - in Size Classes						Total
		1-9	10-49	50-100	101-150	151-200	201+	
has changed significantly	Count	4	6	7	1	1	1	20
	% of Total	10.0%	15.0%	17.5%	2.5%	2.5%	2.5%	50.0%
has changed somewhat	Count	2	11	1	1	0	1	16
	% of Total	5.0%	27.5%	2.5%	2.5%	.0%	2.5%	40.0%
has not changed	Count	1	0	2	0	1	0	4
	% of Total	2.5%	.0%	5.0%	.0%	2.5%	.0%	10.0%
Total	Count	7	17	10	2	2	2	40
	% of Total	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%

Table 4-26: Impact of e-business on customer relationship.

Effect of e-business on customer relationship		Company Size (number of employees) - in Size Classes						Total
		1-9	10-49	50-100	101-150	151-200	201+	
has changed significantly	Count	5	7	5	2	0	2	21
	% of Total	12.5%	17.5%	12.5%	5.0%	.0%	5.0%	52.5%
has changed somewhat	Count	2	8	3	0	1	0	14
	% of Total	5.0%	20.0%	7.5%	.0%	2.5%	.0%	35.0%
has not changed	Count	0	2	2	0	1	0	5
	% of Total	.0%	5.0%	5.0%	.0%	2.5%	.0%	12.5%
Total	Count	7	17	10	2	2	2	40
	% of Total	17.5%	42.5%	25.0%	5.0%	5.0%	5.0%	100.0%

While it is true that the impact of e-business has been particularly significant so far it is still worth noting that 35% of the interviewees stated that e-business would bring benefits to large companies in the future, while 55% state that e-business will have benefits for both large and small enterprises (see table 4-27).

Table 4-27: Expected beneficiaries of e-business.

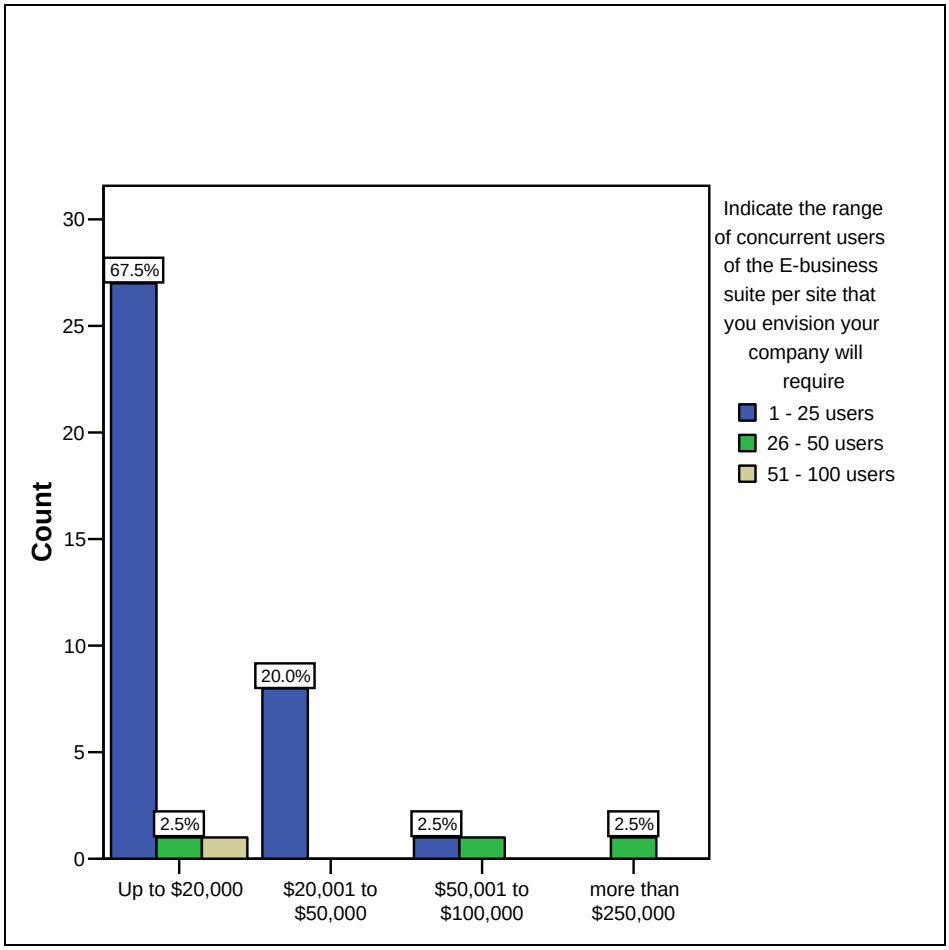
	Frequency	Valid Percent
large companies	14	35.0
both will benefit equally	22	55.0
Don't Know/ no answer	4	10.0
Total	40	100.0

4.11 Expenditure on E-Business

Finally, an attempt was made to forecast future investment in e-business technologies by enterprises in the sector over the next 12 months.

As respondents stated, 72.5% of the enterprises surveyed stated that they would not be changing their current level of investment which is up to $20000, while 20% of the enterprises planned to increase their investment in e-business technologies over time to $20001 - $50000, 5% and 2.5% set the amount of expenditure to $50001-$100000 and more than $250000 respectively, and the interviewees related those figures to the number of users in the enterprise and the target technology assumed to be applied in the enterprise. Relative number of users is show in figure 4-7 below.

Figure 4-7: Expenditure vs. Number of users.



4.12 Assessing Change to E-Business

In order to understand change management dimensions that are applied to assess change to e-business in the food, beverage and tobacco sector (and, especially, to assess their applicability), interviewees were asked to express their agreement with a series of statements regarding change management practices, on a scale of 1 (strongly disagree) to (strongly agree).

In the change to e-business assessment 90% agreed that Top management communicates an emotional unifying vision to become an e-business. 70% indicated that Top management enables employees to freely express their emotions and ideas as they go through the discontinuous

change and this is due to the fact that systems are treated as top management strategy and the number of involved people in the project is relative to the depth of participation in operating the system with respect to the application adopted (ERP, CRM, SCM, BI, EC). 55% of the respondents stated that Top management creates a fun atmosphere that enables emotional release and the ability to experiment with new ideas. 60% of respondents stated that the company invests in creating an organization with line responsibilities to implement the change to become an e-business which adds a heavier burden on the staff to take over the success of the e-business project in terms of applicability and operability.

Table 4-28: Dimensions of change management in the Palestinian FMCG enterprises.

Dimension	Description of Concept	% Total
Emotional Unifying Vision	Top management communicates an emotional unifying vision to become an e-business.	90% agree
Enabling free flow of emotions	Top management enables employees to freely express their emotions and ideas as they go through the discontinuous change	70% agree
Providing transition to past	Top management provides a transition from the old ways to the new ways of e-business.	57% agree
Creating a playful environment	Top management creates a fun atmosphere that enables emotional release and the ability to experiment with new ideas.	55% agree
Change Infrastructure	The company invests in creating an organization with line responsibilities to implement the change to become an e-business.	60% disagree
First Line Supervisors	The company focuses on gaining the commitment of first line supervisors to e-business	82% agree
Project Management	The company assigns a project manager to the e-business transition and organizes the changes like a project with tasks, responsibilities, and deadlines.	70% disagree
Training	The company invests in training to enable employees to successfully do their new jobs and new tasks.	85% agree
Reward	The company relates the reward system to the success of the e-business vision and mission	57% disagree

4.13 Conclusion

In the recent months, the Palestinian FMCG market has followed the trends of the entire ICT sector, which is currently undergoing a phase of reflection and consolidation. The trends in the coming months should witness companies making more selective and targeted investments. In particular, the researcher expect to see strong growth in ERP led by the demands of larger companies (thanks to increasingly personalized software for the specific needs of food companies) and by the tendency of ERP suppliers to extend their reach to small and medium sized companies.

Electronic mail usage to exchange standardized data still shows slight growth, despite the very good coverage at all company levels. ICT infrastructure systems and online presence are essentially developing, and are now at a growing stage in their life cycle.

Among the more advanced systems, the researcher expect healthy growth in CRM and SCM applications as solutions are developed that are more suitable for small and medium sized companies. However, more modest growth is likely in Sales Force Automation SFA and work flow systems and business intelligence, whilst should remain stable.

The main hurdles are cultural (especially among small and medium sized companies); company structures unable to deal with change; and managers' lack of confidence in the potential of new technologies. Customer, obstacles and constraints are reservations about the security of electronic transactions and, especially, a strong reluctance to modify traditional and well established buying habits.

5 CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Main Findings

The food, beverages and tobacco sector is intensely a competitive sector, which is characterized on the one hand by a relatively small group of large companies that tend to operate nationally and, on the other, by a large number of small and medium-sized business that operate locally, with the balance varying between markets.

The spread of ICT reflects the structure of the food industry. Large companies (usually leaders in their sectors) are the most technologically advanced companies, while smaller companies lag behind in adopting ICT, especially upstream of the various product lines.

The main factors that push companies in the food sector to consider ICT solutions include greater efficiency in internal processes (productive, administrative, delivery of orders, etc.) and integration of internal processes with external organizations to improve logistics and reduce costs. A more integrated view is emerging, with leading companies looking for ways to apply technology strategically to improve business management activities. E-Business ICT have served well the growth/expansion strategies of large companies as well as SMEs that export to foreign markets using the Internet as a marketing channel.

Companies in the sector use e-business mainly to improve their internal processes and procedures. The technologies most commonly used by small and large enterprises alike are e-mail, websites; these are followed, at a considerable distance in terms of diffusion, by EDI, data file exchange through email (though very few smaller businesses use these). The most advanced technologies, such as CRM, SCM systems, and Knowledge Management solutions, are still rare

and are used SME's and larger enterprises. ERP systems are the most apparent to be the common factor shared by all companies surveyed.

Despite the fact that e-business in the sector is still predominantly concerned with internal processes and procedures, e-commerce has grown in the past few years. Selling online is moderately not common, used by only 17.5% of the enterprises surveyed. The prospects for selling online are brighter than for procuring online, however; the survey revealed that the percentage of companies planning to implement selling online within the next 12 months was 10.26%, while 15.38% planned to implement selling online within the next 24 months.

B2B is the channel most commonly employed in selling online (7.5% of the enterprises direct their online sales to final consumers). Participation in marketplaces and B2B initiatives of various kinds remains marginal in the sector (only 12.8% of the sample surveyed sells products through a marketplace or other B2B initiative). But the number of enterprises planning to participate in future initiatives of this kind is growing.

The growth of selling online would be boosted by the introduction of websites on the market by companies already operating in the conventional market (which have an advantage over brick and mortar in that they already have their own infrastructures and a well-known brand, and a solid customer base which is easily maintained and contacted via several resources) and by the successful launching of sites featuring typical FMCG products.

The principal barriers and factors slowing down growth in e-business are, in the case of e-procuring, the need for face-to-face interaction with suppliers, and the small number of suppliers selling online so far; the principal barriers to selling online are the fact that many of the products offered by the enterprises surveyed are not suitable for online sales. In both large and small businesses, users' lack of confidence in the confidentiality and security of transactions represents

another significant barrier. Lack of connectivity and ICT infrastructure on the client side is a major factor that goes along with very poor online banking services that supports the online processing of transactions.

Based on the primary and secondary research conducted in this thesis, we can conclude the following regarding change and how it is being managed in the surveyed FMCG companies:

- The massive wave of change associated with the Internet and e-business will have a big impact on companies that are passing through a transition period.
- Strong organizational change capabilities are likely to be key success factors in successfully implementing e-business transformation.
- Project management issues and the dedication of a change management expert or project manager to assess change and direct the flow of the e-business project in the enterprise is not implemented as a core practice during the adoption of e-business.
- It was found that there is no relation between the resulting output of adopting e-business with the reward system in the company.
- There is good awareness among the top management in the companies about the need to assess change but they are not implementing it to the fullest due to logistical and financial reasons.

On the whole, the results of the survey reveal that a rather low percentage of enterprises is particularly involved with selling online. But they stated that selling online has made a significantly better impact, especially when it comes to quality of customer service and improvement of the efficiency of company processes.

Table 5-1 illustrates the strengths of the large FMCG companies which also represents weaknesses of SMEs. It demonstrates the different aspects that affects the development of the company's status to adopt e-business.

Table 5-1: Analysis of the points of strength and weakness of e-business in the food, beverages and tobacco sector.

Points of strength in Large companies	**Points of weakness in SMEs**
Presence of large multinationals leading in the introduction of ICT and development of e-business	Presence of a large number of SMEs which lag behind when it comes to ICT "awareness"
Presence of many companies capable of offering local specialty products which are also popular abroad	SMEs often cannot budget for ICT expenses
Very Good level of availability of "basic" ICT infrastructures (PC, website, e-mail, internet access)	Lack of availability of certain "advanced" ICT structures (such as Intranet, WAN, Extranet), especially in SMEs
ICT training and education is quite widespread in larger enterprises	Little education and training in SMEs
Good prospects for growth for selling online, in terms of B2B	Little use of B2B e-commerce throughout the sector
Significantly widespread use of online data exchange.	Enterprises rarely participate in B2B initiatives and marketplaces in the sector
Growing offer of specialized ERP services for food enterprises	Certain specific e-business solutions (SCM, CRM, ASP, KM, etc.) are rare, practically non-existent in SMEs
About 40% of enterprises plan to increase ICT expenditures in the next 24-36 months	Presence of high barriers (mostly "psychological") to growth in e-commerce
The company invests in training to enable employees to successfully do their new jobs and new tasks.	On the job self training is employed to save costs and time resulting in a poor performance of the employee.

Among all companies' classes the following practices were found to be positive:

1. Emotional Unifying Vision and enabling free flow of emotions are used to manage change in the enterprise

2. The company focuses on gaining the commitment of first line supervisors to e-business

Among all companies' classes the following practices were found to be negative:

1. Change Infrastructure is not being handled since the company does not invest in creating an organization with line responsibilities to implement the change to become an e-business

2. Project Management dimension is being managed poorly.

3. The company does not relate the reward system to the success of the e-business vision and mission

5.2 Economic Implications

As this research has noted more than once, the food, beverage and tobacco sector is "polarized" when it comes to ICT structures and openness to and awareness of ICT: a relatively small group of large enterprises has pioneered introduction of technologies available on the market into the sector, while on the other hand a large group of SMEs (the proportion of which varies from market to market) lags a long way behind in ICT.

This distinction is important for understanding the economic implications of e-business.

The first consideration emerging in this regard is that e-business has so far had a "partial" economic impact precisely because only a relatively small number of companies have so far been involved to a significant extent: the largest enterprises. The impact of e-business on SMEs must be measured above all in terms of the ICT infrastructures currently at their disposal: the website, Internet, e-mail, and online exchange of data.

The second conclusion emerging from the impact of e-business is that the impact of e-business on the sector is not judged very positively by the sample of enterprises, although we must distinguish here between the impact of procuring and that of selling online. For the impact of selling online on the sector is definitely seen in a more positive light than the impact of procuring online; the impact of selling online is seen as particularly positive in terms of quality of customer service and efficiency of internal processes only when it comes to large enterprises based on the results.

Third, it is important to emphasize that over half of the respondents expected to see e-business bring benefits in the future, for larger companies in particular but also for SMEs. Only a

marginal number (5%) of interviewed respondents replied that e-business would not bring benefits in the future.

Having made these statements, let us go on to see what the implications of ICT and e-business have been for the enterprises surveyed so far.

There are two implications for the value chain (internal value chain and external value chain).

- The first is increased optimization of company processes, especially in the areas of production, logistics, administration and order management, achieved from the introduction of SCM packages and of ERP systems custom-tailored to the specific needs of FMCG companies.

- The second implication involves improved customer service, achieved because of faster delivery, decreased inventory in distribution warehouses, and the introduction of automatic stock replenishment systems, easier communications, and increased visibility on the market for SMEs due to the online activities.

It follows that customer relations have overall improved. SMEs in particular note a significant change in customer relations, while the impact of e-business on larger enterprises has been significant, especially in the areas of organizational structure and internal processes.

E-business has had only minor implications for the structure of the SMEs in the sector thus far. E-business has not resulted in any significant structural changes. The modest success achieved so far is largely due to the following factors: a widespread lag in ICT (especially in SMEs); low penetration of technologies (in this regard, it is worth noting the high percentage of companies which cited difficulty in locating suppliers who sell online on the market as a barrier to growth of

e-procurement); low (or inexistent) ICT budgets; lack of education and training in SMEs promoting formation of barriers and hurdles to the growth of e-business.

The principal trends we will see in the sector in relation to e-business in the near future are:

- A slow tendency toward dissemination of certain "advanced" technologies (such as LAN, WAN, Intranet and Extranet) extending to medium-sized and small businesses;
- Growth and dissemination of selling online, B2B;
- An increase in the number of businesses participating in sector marketplaces and e-business initiatives;
- An increase in ICT expenditures in a significant number of enterprises.

The most important economic implications for the next few years may be summed up as follows:

- Optimization of certain company processes/areas/activities could promote recovery of operating spread and free up financial resources for use in other areas (such as trade marketing, customer service, etc.). The structure of the value chain will most likely not be significantly altered, however;
- Increasing collaboration among enterprises as shared network initiatives increase; this could result in the birth of new agreements or strategic alliances, or in mergers and acquisitions, thereby increasing concentration in the sector;

- Growing cost competition accelerated by introduction of a number of labor-saving technologies could drive a number of companies (especially smaller enterprises) out of the sector as they fail to stay competitive on the market;

- Widespread adoption of new ICT applications and infrastructures could lead to increased integration within various sectors, especially between industry and distribution;

- Growth in logistics, together with dissemination of specific application systems (including CRM, SCM, and SFA) could promote an overall improvement in customer service;

- Growth of selling online could encourage the birth of new enterprises specializing in this channel (and growth of existing enterprises), development of new online players (online distributors, virtual consortia, etc.) and creation of strategic new groups of enterprises;

- Diffusion of ICT, if supported by appropriate education and training, could lead to a change in attitudes toward ICT, even in SMEs.

5.3 Recommendations and Policy Implications

- **The food & beverage industry has been a follower of e-commerce and e-business development rather than an early adopter. Encouraging the further up-take of e-business by this sector, and especially among SMEs, will therefore be a key issue for policy actions.**

  In the food & beverage industry, the adoption of e-business has been slower than in leading sectors such as other manufacturing sectors and services sector in particular. E-mail and EDI have been introduced later, and more sophisticated technologies and applications are still poorly diffused, except among large enterprises and their larger suppliers. CRM, SCM, BI and EC are still in a pilot stage. The overall degree of diffusion of ICT within the Palestinian FMCG industry depends heavily on the adoption behavior of SMEs, which are the predominant institutional type. It is necessary to foster SMEs' access to e-business solutions. SMEs have clearly increased their efforts, but important issues remain to be addressed in order to exploit the potential of e-business. These include the affordability of the solutions proposed, the development of standards, security issues and the optimization of financial measures supporting these goals; raising awareness and giving support for e-business applications; measures to reinvent/adjust technologies to SMEs level: i.e. low-cost CRM, ERP; supporting new system applications & services, such as open source, ASP respectively.

- **The integration of business processes along the supply chain and logistics will become a key to success in the FMCG sector and therefore the most important area for e-business applications.**

  There is continuous pressure in the food & beverage sector to optimize internal processes and to integrate them with those of customers and suppliers. Products are increasingly being made under license or in collaboration with regional producers. Long-term relationships and trusted partnerships with raw material suppliers are becoming even more important in order to safeguard the quality of products. Collaboration with distribution networks is increasing.

  The sector, however, is still characterized by the existence of "islands of activity" which have proved to be difficult and costly to integrate. Many food-manufacturing processes are still labor-intensive and this imposes a significant barrier to greater diffusion of ICT. There have been massive investments in logistics, but these are largely limited to the bigger companies. Thus, there is a strong case for developing affordable integrated management solutions for small and medium-sized enterprises.

  This pressure for integration also raises policy challenges, especially in the area of harmonization of product legislation and regarding monitoring of the impact of transport and logistics on economy and the environment.

- **It is still important to raise awareness and recognize the future impact of ICT.**

  So far only leading companies have progressed from use of ICT as a mere tool for reducing production costs to an important support for strategic decisions and e-business interaction models. The dominant culture, especially among SMEs, is still conservative. They lack confidence in the potential and benefits of new technologies for their business, and instead underline the common concerns about security and the cultural reluctance to any change in established procedure.

  Companies of all sizes, however, should be fully aware and recognize the impact which e-business applications will have on their business in the future, e.g. for achieving competitive advantages and enhancing profitability. Successful initiatives which have developed forms of collaborative product design, joint marketing and integrated logistics among the various players in the value chain should be promoted and become common knowledge in the sector. To this end, especially among SMEs, there is a need for promoting information activities about the potential of ICT through the dissemination of best practices, enhancing trust and confidence, and developing actions aimed at raising awareness and ensuring that appropriate skills are available. Industry associations will play an important role in the take-up of these actions and in involving their members.

- **Facilitating and promoting creation of marketplaces and B2B portals capable of drawing SMEs closer to larger enterprises and large-scale distribution**

  Creation of marketplaces and vertical portals for enterprises in the food industry and in distribution will promote an orientation toward cooperation among parties. Special initiatives could be implemented in sectors characterized by an important offering of "typical" national specialty products (soft drinks, cheese, meet, etc.). Different NGOs and organizations that are specialized in promoting Palestine uniqueness internally and externally like Paltrade are invited to support the formation of the strategy and implementation of such activities and initiatives to promote the being of Palestine as a potential strategic prosperous e-market for foreign and local investors.

  Initiatives of this kind would offer countless benefits for SMEs, but also for larger enterprises and distributors. The benefits for SMEs would include increased visibility (for both the enterprise and its products), improved communication with prospective customers, reduction of the time and expense involved in negotiation (telephone contact, sending of documentation sending of information and clarification on products, productive processes, etc.). Large enterprises and distributors wanting to expand their range by offering specialty products would benefit from the presence of small local suppliers capable of guaranteeing know-how, procurement of quality raw materials locally, the image and guarantee of the genuine specialty product, and flexibility in production.

- **Promotion of ICT education, training and "cultural" change, especially in SMEs**

  Promotion of training courses, workshops, and establishment of centers of excellence aimed at improving and transferring know-how and skills in the field of computer technology (even at a higher level) to staff and management, while promoting "cultural" change in attitudes toward ICT within enterprises so as to eliminate "psychological" barriers slowing down growth in use of ICT.

  In this regard it could be useful to provide SMEs with financial incentives (to be used for purchasing business and/or technological consulting services) or to launch an e-business related to a "train-the-trainer" program within SME support networks in order to educate e-business instructors. Several major role players in this model could provide substantial benefits to the advancement of cultural awareness and business orientation such as Universities (i.e. Birzeit Information Unit) that is offering training on how to train business decision makers to strategically formulate e-business strategy and implement it. Another strategic approach is through a specialized NGO that deals with providing on site assessment to companies, which are intending to adopt e-business or have an e-business initiative. Solution providers have a great responsibility to raise the level of the sector by providing state of the art technologies along with best practices consultancy and training, which shall reflect positively on the efficiency of the sector.

- **More emphasis should be applied on project management issues and the dedication of a change management expert or project manager to assess change and direct the flow of the e-business project in the enterprise.**

- **When managing change it is essential to relate the output of adopting e-business to the reward system in the company, which is not limited to financial compensation but also to recognition, a new title, status, promotion or free time offered in return to special efforts made to make the e-business initiative of the company a success story. Consequently, this will have a positive impact on the whole adoption process.**

5.4 A Model for Integrating E-Business in FMCG Enterprises in Palestine

(HJOUJ MODEL FOR E-BUSINESS INTEGRATION)

To end this discussion it can be concluded that there are relations between the characteristics of the FMCG processes that have influenced the development of e-business and how it has been handled. There is also a distinction between the business process and the physical handling of products related to e-business. This is mainly because of how e-business has evolved in terms of responsibility in organizations and the main objectives for implementing these kinds of information systems.

Thus, it can be stated that e-business in general has been able to change the way that FMCG enterprises operate in terms of a shift from one system to another. This, however, also proves the strength of the existing FMCG sector and its ability to adapt to new technology and management solutions.

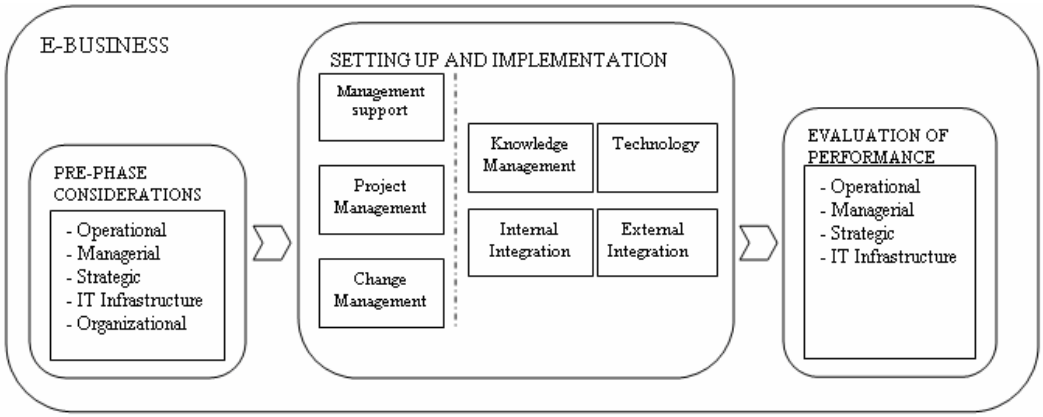
From an internal perspective, i.e. the situation of a company having implemented e-business, it has been found that most of the benefits related to e-business are not within physical distribution and transportation of goods. From the research it can be concluded that the most apparent advantages of e-business is the way it affects the administrative processes and organization of a company. Whereas the physical changes, i.e. material handling, distribution and transportation, have been almost non-existing, the efficiency of administration, handling customer order, customer service, etc., has proven to increase significantly. But this increase has not reached its optimum level especially when all the components of e-business are present or planned to be implemented in the enterprise. It is therefore proposed as a tentative conclusion that one of the reasons for this situation is that there is a gap between the management strategy in FMCG enterprises in Palestine and how e-business is being implemented in these enterprises. This is also

one of the reasons for looking into the possibilities of e-business as a tool for integration in supply chains and customer relationship management practices. It is also the reason for looking closer into ERP systems and the enormous part they play in integrating functions and processes within an organization.

A model for e-business in FMCG industry in Palestine has been developed from ERP implementation theory. The purpose of the model is to integrate e-business as a tool in managing the various processes in an FMCG in Palestine and realize the potential advantages of e-business presented in this thesis.

Figure 5-1 illustrates the proposed framework for implementing e-business in organizations derived from (Al-Mashari et al., 2003) and (Shang and Seddon, 2000) e-business and ERP implantation models. It suggests a structure of three different stages: pre-phase conditions, setting up and implementing and evaluation based on the experiences documented in the ERP implementation literature. It should be noticed that this model is just a first step and that it has to be empirically tested and validated. Moreover, it is worthwhile to mention this model is a part of the complete model that propose the sequence of the e-business components that should be implemented in an FMCG enterprise in Palestine as shown in figure 5-2 below.

Figure 5-1: a proposed model for implementing e-business.



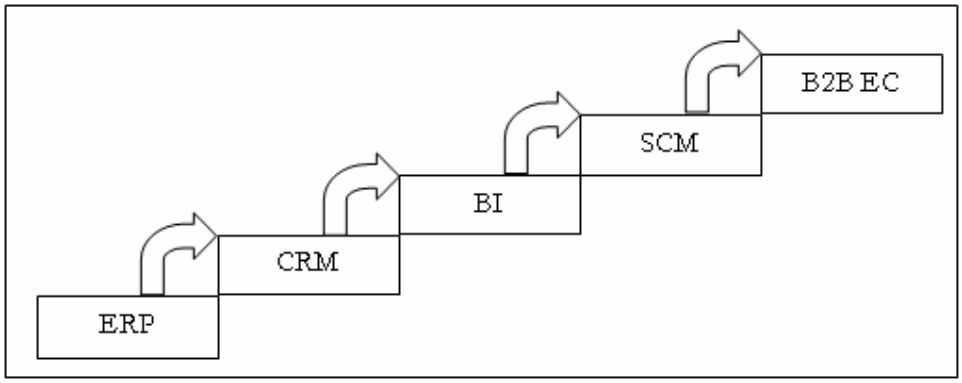
Source: (Shang and Seddon, 2000, p. 13)

The model emphasizes the role of integration of operations, activities and e-business in organizations. Three stages: pre-phase considerations; setting up and implementing; and evaluation of performance aim first of all to bring management operations and processes in focus. In doing so there are great possibility to use the information connected to the business process as a means to improve management operations and processes. The implementation process should also be regarded as a critical process according to this model; the main reason being that the success of a project is related to how it is integrated into the organization as a whole. Finally, it is important to evaluate and measure what has been achieved for future improvements and changes.

Adopting e-business in Palestinian FMCG enterprises in Palestine is a project that should pass through several phases based on the module that is being adopted one at a time. From the field research conducted, it was concluded that starting with ERP should be the first step towards laying the back office infrastructure for e-business. Since FMCG industry is highly competitive and customer focused the second step should be evaluating the current best marketing practices and relate them to customer relationship management. Thus, setting up marketing strategies using CRM, this consequently should be the next phase of the project to be implemented. Afterwards, in

the third phase of the project Business Intelligence would play the role of the wizard that digs and finds what is missing in the chain and propose the best alternatives of products and services to be offered to customers. Supply chain integration is the last but not least phase of the project that should complete the value chain based on the real feedback of the market defining the demand. Hence, it is the duty of the enterprise to determine which company should be on the other side of the value chain; connected through SCM. After proceeding with the required evaluation of performance of the integrated system (ERP, CRM, BI, and SCM) B2B E-commerce could be presented in several forms to create the direct online missing link between the distributor and retailer.

Figure 5-2: HJOUJ Proposed Phases of E-business Implementation in FMCG enterprise in Palestine.



The three phase model 1) pre-phase considerations 2) setting up and implementation 3) evaluation of performance shall be applied on each and every stage of adopting an e-business component (i.e. ERP, CRM, BI …). This practice shall insure the consistency and integrity of modules implemented.

It can be concluded that there is a potential of using e-business to integrate operations and processes, and that it contributes to inter-organizational communication and cooperation. Focusing on how benefits could be obtained in the physical handling and distribution of goods, thus

providing a framework integrated with sales and marketing, is a step towards the development of e-business as a tool in FMCG enterprises in Palestine.

5.5 Practical Contribution of the Research

The overall purpose of this study has been to provide a better understanding of e-business in FMCG enterprises in Palestine. The way that was chosen was to evaluate the potential of implementing e-business as a tool in FMCG enterprises. Through the structured interview and the field research the researcher has approached several reputed companies in this sector and discussed several issues that concern the development and growth of the enterprise with the target respondents. The interviews apparently concluded in the indirect education of the respondent about the benefits of the systematic adoption of e-business and the real value of the successful implementation of such solution to the company. And an indirect consultancy was provided to the respondents while discussing their status with their e-business initiative. On the other hand, the researcher has implemented a complete e-business suite based on the proposed model in one of the sites surveyed which resulted in a successful operating e-business solution and fruitful success story in Palestine as the first complete e-business solution to be applied in the FMCG sector.

5.6 Further Research

5.6.1 Introduction

It has been concluded that there is a potential in e-business being a tool for efficient FMCG processes. At the same time e-business is more than a transaction of electronic information; it also involves supply chain thinking, customer relations management, business intelligence and enterprise resource planning. Supply chain integration and the principles of the extended enterprise have also been mentioned as a way of making the logistical processes more efficient which means a focus on the development from cooperation towards collaboration.

As many of the results in this thesis are purely practical, future research requires these findings to be tested and evaluated in practice for other complementary applications and solutions. Thus, there is a need for further research to improve and validate these models both through case studies and surveys. In future research it is also important to put e-business in a logistics and supply chain context.

Based on the results and conclusions of this thesis the following areas have been identified as questions for further research:

5.6.2 Supply chain integration

One question that has been raised in this thesis is the importance of implementing e-business as a way to achieve efficient integration of logistics processes in FMCG industry. Using ERP as a framework for efficient e-business integration is just one way to approach this area. It is recognized by companies involved in e-business that there are distinct advantages in cooperating and sharing information beyond organizational borders. As this research has focused on e-business

and not directly on collaboration and supply chain integration, it is therefore a natural development to enlarge the theoretical frame of reference to encompass this area.

A concept that has been mentioned here is the extended enterprise, a company or organization having an extensive collaboration with its supply chain partners. It has purposely not been further investigated in this thesis but is very closely related to the kind of e-business solutions discussed here.

5.6.3 E-business as a standard interface

Whether companies are to cooperate or not, efficient communication is required in order to maintain a business relation. Information standards using EDI provide an efficient tool for communication without any closer cooperation between the parties involved. Using the XML standard further increases the possibilities to efficiently send and receive information. For the FMCG industry, the EDI and XML standards are important tools integrating the transportation system and the production system. Thus, apart from the role of integration that can be found in e-business it is also important to investigate the consequences of e-business as a standardized interface for communication.

E-business, as defined in this thesis, raises many questions for further research. Many of these questions are based on information technology and how it is possible to efficiently use information as a means to improve processes. It is information technology and the way it is used in the company that ultimately decides the efficiency of the management system. E-business is a tool but information technology is the tool box!

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APPENDIXES

Appendix I

List of interviewees:

***Respondents to E-Business (REB)**

i. REB1 IT Manager

ii. REB2 Financial Manager

iii. REB3 General Manager

iv. REB4 Financial Manager

v. REB5 General manager

vi. REB6 General Manager

vii. REB7 IT Manager

viii. REB8 General Manager

ix. REB9 General Manager

x. REB10 IT Manager

Appendix II

Questionnaire

Dear respondent:

I am a student in the MBA program at Birzeit University; I am conducting a master's thesis research to assess the readiness of the FMCG wholesale enterprises in Palestine by means of an Enterprise Survey on Electronic Business. I hope to measure its infrastructure for E-business, identify areas that need attention.

Please complete the enclosed questionnaire. Your candid and thoughtful reply will help our evaluation. Most people are able to complete the questionnaire in less than half an hour. Your response and any comments will be treated with utmost confidentiality. After the results are tabulated and compiled, we will issue a report.

Your cooperation is highly appreciated,

Sincerely,

Eng. Khaled Hjouj
0599 452 008

Enclosures

Enterprise Survey on Electronic Business

BirZeit University

Faculty of Graduate Studies

MBA Program

Questionnaire

of an Enterprise Survey on Electronic Business

Carried out by
Eng. Khaled Hjouj

In May 2005

APPLYING E-BUSINESS IN FAST MOVING CONSUMER GOODS (FMCG) ENTERPRISES IN PALESTINE

Ramallah, Palestine
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Implemented by
Eng. Khaled Hjouj

Glossary

ASP	Application Service Providing. Services that enables the usage or software and applications over the internet or other networks.
B2B	Business to business. Commercial transactions between businesses conducted over IP (internet protocol) based networks or other computer-mediated networks.
B2C	Business to consumer. Commercial transactions between businesses and consumers conducted over IP (internet protocol) based networks or other computer-mediated networks.
B2G	Business to government. Commercial transactions between businesses and the public sector conducted over IP (internet protocol) based networks or other computer-mediated networks.
CRM	Customer Relationship Management. A net-based software that supports the finding, getting and retaining of customers.
EDI	Electronic Data Interchange. Data exchange in structure form (EDIFACT) between businesses.
e-Marketplace	A B2B Internet trading forum in which multiple buyers and sellers exchange goods and services within an industry group or geographic region
establishment	By establishment we mean a single identifiable unit at a particular address.
Extranet	A private, secure extension of the intranet running on Internet protocol that allows selected external users to access some parts of an organization's intranet
Internet	Relates to Internet Protocol based networks: www, extranet over the internet, EDI over the internet, internet-enabled mobile phones.
Intranet	An internal company network using Internet protocol to enable communications within an organization
KM	Knowledge management. A net-based software solution which aims to support organizations to generate value from their intellectual and knowledge-based assets by providing an infrastructure that allows to systematically aggregate and disseminate information and company internal knowledge.
LAN	Local Area Network. A local computer communication network that serves users within a restricted geographical area. LANs consist of servers, workstations, printers and communications hardware (e.g. routers, bridges, network cards) and a network operating system.
Mobile internet services	Internet services available via a wireless terminal (e.g. a mobile phone, PDA or mobile PC device) and using Wireless Application Protocol (WAP) or General Packet Radio Services (GPRS).
SCM	Supply Chain Management. An internet-based software solution that supports the management of logistics and inventory along the entire value chain and connects business partners.
SSL	Secure sockets layer. The primary security protocol on the internet which utilizes a public key / private key form of encryption between browsers and servers. The term "secure servers" usually refers to the application of this protocol for transactions.
WAN	Wide Area Network. A computer communication network that serves users within a wide geographic area, such as a region or country. WANs consist of servers, workstations, printers and communications hardware (e.g. routers, bridges, network cards), and a network operating system.
xDSL	Digital Subscriber Line. DSL technologies are designed to increase bandwidth available over standard copper telephone wires. Includes
ISDN	Integrated services digital network is a fast digital phone line can be provided by most phone companies.
Leased Line	A permanently dedicated telephone line typically used to link moderate-sized local networks from one location to another.

E-Biz-MBA-THS-Code

1.	Company Size (number of employees) - in Size Classes (حسب عدد الموظفين) حجم الشركة
i-	1-9
ii-	10-49
iii-	50-100
iv-	101-150
v-	151-200
vi-	201+
2.	Has the turnover of the company increased, decreased or roughly stayed the same compared with the financial year before? هل إزداد أو إنخفض أو إستقر دوران المخزون السلعي خلال السنة المالية الحالية بالمقارنة مع السنة المالية السابقة؟
i-	Increased إزداد
ii-	Decreased إنخفض
iii-	roughly stayed the same إستقر
iv-	Don't Know لا أدري
3.	Which group is the primary customer of the company? من هم الزبائن الرئيسييسن للشركة؟
i-	Consumers المستهلكين
ii-	other businesses شركات أخرى
iii-	the public sector القطاع العام
iv-	no primary costumer - it's mixed لا يوجد زبائن رئيسين- كل ما سبق
4.	Has the company been profitable over the past year? هل تقيّم الشركة بأنها رابحة خلال العام الماضي؟
i-	Yes
ii-	No
iii-	Don't Know
5.	Has the number of employees in the company increased, decreased or roughly stayed the same during the past year? هل إزداد، إنخفض، أو إستقر عدد الموظفين خلال العام الماضي؟
i-	increased
ii-	decreased
iii-	roughly stayed the same
6.	Estimation of the percentage of employees with a college or university degree in the company ما هي النسبة الئوية التقريبية لعدد الموظفين الذين يحملون شهادة من كلية أو جامعة في الشركة؟
7.	How large is the market share of the company in the country by considering the company's main sales area? ما هو نصيب الشركة من حجم السوق المحلي؟
i-	less than 1%
ii-	1% up to 5%
iii-	6% up to 10%
iv-	11% up to 25%
v-	larger than 25%
8.	Please select the range that most closely represents your organization's total annual revenue إختر أقرب شريحه تمثل الدخل السنوي للمؤسسة:
i-	Less than $100 thousands in revenues
ii-	$100 - $500 thousands in revenues
iii-	$500 thousands - $1 million in revenues
iv-	$1 - $5 million in revenues
v-	$5 - $10 million in revenues
vi-	Don't Know

9.	Indicate the range of concurrent users of the E-business suite per site that you envision your company will require :حدد عدد المستخدمين الحالين أو المتوقعين لبرامج الأعمال الإلكترونية في الشركة
i-	1 - 25 users
ii-	26 - 50 users
iii-	51 - 100 users
iv-	101 - 200 users
v-	More than 200 users
10.	Please select the closest range for your anticipated total implementation budget of an e-business solution :إختر أقرب موازنه قد تنفقها على تطبيق برامج الأعمال الإلكترونية
i-	Up to $20,000
ii-	$20,001 to $50,000
iii-	$50,001 to $100,000
iv-	$100,001 to $250,000
v-	more than $250,000
11.	In what languages do you need to use this solution? This refers to requirements such as a user interface language (select as many as appropriate) حدد اللغة أو اللغات التي قد تحتاجها أثناء إستخدامك لبرامج الأعمال الإلكترونية؟
i-	Arabic
ii-	English
iii-	French
iv-	Hebrew
v-	other
12.	Please indicate which one of the following enterprise size and organizational structures most accurately represents your organization. :حدد حجم المؤسسة بالنسبة للفروع والتركيب والتركيب الذي يتناسب معها
i-	A Division of a Large Corporation فرع لشركة كبرى
ii-	A Single-Site Enterprise شركة ذات فرع رئيسي فقط
iii-	National with 2 - 10 sites, and mixed Distribution/Manufacturing شركة وطنيه تتكون من 2-10 فروع تعمل في مجال التصنيع والتوزيع
iv-	National with 2 - 10 sites, primarily Distribution شركة وطنيه تتكون من 2-10 فروع تعمل في مجال التوزيع
v-	Multi-national with 5 sites or more, and mixed Distribution/Manufacturing شركة عالمية تتكون من 5 فروع فأكثر تعمل في مجال التصنيع والتوزيع
vi-	Multi-national with 5 sites or more, primarily Distribution شركة عالمية تتكون من 5 فروع فأكثر تعمل في مجال التوزيع
13.	Why would you perform an e-business research? لماذا تقوم بعمل دراسه حول برنامج الأعمال الإلكترونية؟
i-	we are not performing a research لا نقوم بعمل دراسة
ii-	We are seeking a new system نبحث عن نظام جديد
iii-	We must replace a legacy system يجب إستبدال النظام القديم
iv-	We need to integrate multiple systems نحن بحاجة لربط أنظمة متعددة
v-	We need to replace a current supplier نحن بحاجة لإستبدال مزود الخدمات الحالي
14.	Please indicate the server platforms you currently use or plan on using (select all that apply). :حدد نوع الخادم الإلكتروني الذي تستعمله أو تخطط لإستعماله
i-	Linux (such as SUSE, Red Hat)
ii-	Novell Netware
iii-	Unix (such as Solaris or AIX)
iv-	Windows NT/2000/XP
v-	Other
vi-	Don't Know

15. Please indicate the DBMS platforms you currently use or plan on using (select all that apply).
حدد نوع قواعد البيانات التي تستخدمها أو تخطط لإستخدامها (إختر كل ما ينطبق):

i- IBM DB2
ii- Informix
iii- Microsoft SQL Server
iv- MySQL
v- Oracle 7/8/9
vi- Sybase
vii- Other
viii- Don't Know

16. **Please answer the following questions:**
الرجاء الإجابه على الأسئلة التالية:

		Yes	No	If the Answer is **NO**, when would you think that you will present it in the company? إذا كانت الإجابة (لا) فهل تعتقد أنك ستستطيع تطبيقها في المؤسسة؟		
				6 Months	12 Months	18 Months
i-	Does the enterprise use computers? هل تستخدم المؤسسة أجهزة حاسوب؟					
ii-	Does the company have a Management Information System Department? هل لدى المؤسسة دائرة أنظمة معلومات؟					
iii-	Does the company have access to the internet? هل للمؤسسة نفاذ مباشر لشبكة الإنترنت؟					
iv-	Does the company have a website? هل للمؤسسة موقع إلكتروني؟					
v-	Does the company update information on the website on a constant basis? هل تحدّث المؤسسة بياناتها على الموقع الإلكتروني بصورة منتظمة؟					
vi-	Does the company use e-mail? هل تستخدم المؤسسة بريد إلكتروني؟					
vii-	Does the company use a Local Area Network (LAN)? هل تستخدم المؤسسة شبكة معلومات محلية؟					
viii-	Does the company use a Wide Area Network (WAN)? هل تستخدم المؤسسة شبكة معلومات عريضة- بين الفروع؟					
ix-	Does the company use an intranet? هل تستخدم المؤسسة شبكة معلومات خاصة؟					
x-	Does the company use an extranet? هل تستخدم المؤسسة شبكة معلومات ذات روابط خارجية؟					

17.	If the company accesses the internet, for accessing the Internet, is there an analogue dial up modem, ISDN, DSL, such as ADSL, Leased Line, or another fixed connection? إذا كانت المؤسسة تستخدم الإنترنت، فإن وسيلة النفاذ المباشر هي:
i-	analogue dial up modem
ii-	ISDN
iii-	DSL, such as ADSL or SDSL
iv-	other fixed connection
v-	other
vi-	Don't Know
18.	Is there an exchanging standardized data with the company's buyers or sellers electronically? هل هنالك تبادل بيانات إلكتروني بين المؤسسة وبين المشتري أو مزودي الخدمات؟
i-	Yes
ii-	No
iii-	Don't Know
19.	if used, As technical standards for exchanging data does the company use any of the following standards: أن وجد، هل تستخدم المؤسسة أي من القواعد أو الوسائل التالية لتبادل البيانات:
i-	XML-based standards like cXML, ebXML
ii-	standard EDI
iii-	Internet-based EDI
iv-	Text file
v-	Don't Know
20.	If used, Does the company intend to replace EDI-based solutions for electronic data-interchange with XML-based solutions within the next 24 months? لتبادل المعلومات خلال 24 شهر القادمة؟ XML بنظام EDI إن وجد، هل تنوي المؤسسة إستبدال نظام XMLبنظام
i-	yes, we plan substantial replacements
ii-	yes, but only to a smaller extent
iii-	no
iv-	Don't Know

21.	Which of the following standardization issues are considered critical to the success of e-business in the company? **(Please select all that apply)** أي من القواعد التالية تعتبر عامل نجاح أساسي لبرامج الأعمال الإلكترونية (الرجاء اختيار كل ما ينطبق):
i-	Security الأمن المعلوماتي
ii-	data protection or privacy حماية المعلومات والخصوصية
iii-	cataloguing and classification issues التصنيف
iv-	business messaging or transaction processing الرسائل التجارية وتنفيذ المهام الإلكترونية
v-	Other غير ذلك
vi-	None لا شيء مما ذكر
vii-	Don't Know لا ادري

22.	Does the company offer its employees computer or IT training? هل توفر المؤسسة تدريب تكنولوجي لموظفيها؟
i-	Yes
ii-	No
iii-	Don't Know
23.	Where does the company offer its employees this training? أين توفر المؤسسة هذا التدريب لموظفيها؟
i-	in-house داخل المؤسسة
ii-	IT training offered by third parties بواسطة طرف ثالث
iii-	Both كلاهما
24.	Has the company outsourced some of its IT activities? هل تعاقدت الشركة مع مزودي خدمات تكنولوجية لتنفيذ بعض نشاطاتها؟
iv-	Yes
v-	No
vi-	Don't Know
25.	Does the company sell goods or services on the Internet through any of the following: هل تقوم المؤسسة ببيع أي من خدماتها أو بضائعها على الإنترنت بواسطة...
i-	use an own company web site for selling online بإستخدام الموقع الإلكتروني للمؤسسة
ii-	other online distribution channels بواسطة قنوات التوزيع الأخرى
iii-	an electronic marketplace on the Internet for selling online موقع سوق ألكتروني للبيع على الإنترنت
iv-	The company does not sell goods or services on the Internet الشركة لا تبيع أي من منتجاتها أو خدماتها على الإنترنت
26.	If your company sells online, for how long has the company offered goods or services for sale online? اذا كانت المؤسسة تبيع بواسة الإنترنت، فمنذ متى قامت بذلك؟
i-	for more than 2 years
ii-	for 1-2 years
iii-	for less than 1 year
iv-	Don't Know/ no answer
27.	If your company does not sell online, when would you present selling online in the company? إذا لم تكن الشركة تبيع بواسطة الإنترنت، فمتى ستقدم خدمة البيع بواسطة الإنترنت؟
i-	Within 6 months
ii-	Within 12 months
iii-	Within 24 months
iv-	Don't Know
28.	Can customers also pay online for the goods or services they have ordered? هل يستطيع الزبائن الدفع من خلال الإنترنت مقابل البضائع أو الخدمات التي يشترونها؟
i-	Yes
ii-	No
iii-	Don't Know
29.	If the company sells On e-marketplaces, different types of business transactions can be accomplished. Is the company actively involved in...? إذا كانت الشركة نبيع من خلال سوق إلكتروني، ما نوع النشاط الذي تمارسه الشركة في السوق الإلكتروني؟
i-	catalogue-based offering of products or services عرض الخدمات و المنتجات من خلال كاتالوجات
ii-	catalogue-based purchasing of products or services شراء الخدمات و المنتجات من خلال كاتالوجات
iii-	auctions -- as a seller مزاد - كبائع
iv-	auctions -- as a bidder مزاد - كمشتري
v-	launching calls for tenders طلب عروض على عطاءات
vi-	answering calls for tenders الاجابة على طلبات عروض على عطاءات
vii-	none of these لا شيء مما ذكر
viii-	Don't Know لا ادري

30. Please answer the listed below questions:
الرجاء الإجابة على الأسئلة التالية:

		YES	NO	If YES, when did you start to use it? إذا كانت الإجابة (نعم) متى بدأت بإستخدامه؟	If NO, when do you plan to present it in the company? أما إذا كانت الإجابة (لا) متى تخطط لإستخدامه في الشركة؟
				6 – 12 – 24 – 36 months (ago)	6 – 12 – 24 – 36 months (future)
i-	Has the company implemented an SCM that is a Supply Chain Management system? هل طبقت المؤسسة نظام إدارة سلسلة التوريد؟				
ii-	Has the company implemented a CRM that is a Customer Relationship Management system? هل طبقت المؤسسة نظام إدارة علاقات الزبائن؟				
iii-	Has the company implemented a special Knowledge Management software solution? هل طبقت المؤسسة نظام إدارة المعرفة؟				
iv-	Has the company implemented an ERP that is Enterprise Resource Planning solution? هل طبقت المؤسسة نظام المحاسبة والتخطيط الكلي؟				
v-	Has the company implemented an E-commerce solution to sell online? هل طبقت المؤسسة نظام تجارة إلكترونية للبيع على الإنترنت؟				

31.	**Important reason for e-business not playing a role in the company:** السبب الرئيسي لعدم لعب برامج الأعمال الإلكترونية دور مهم في الشركة هو:	**YES, important**	**NO, not important**
i-	The company is too small to benefit from any e-business activities المؤسسة أصغر من أن تستفيد من خدمات برامج الأعمال الإلكترونية		
ii-	E-business technologies are too expensive to implement تكلفة تطبيق برامج الأعمال الإلكترونية عالية جداً		
iii-	The technology is too complicated التقنية معقدة للغاية		
iv-	We are too concerned about security issues نحن قلقون للغاية بخصوص أسباب أمن تقنية		

32. Which type of companies will benefit most from e-business?
أي من المؤسسات هي الأكثر إستفادة من برامج الأعمال الإلكترونية؟

i- small and medium sized companies المؤسسات الصغيرة والمتوسطة الحجم
ii- large companies المؤسسات الكبيرة
iii- both will benefit equally كلاهما يستفيد منها بالتساوي
iv- no one will benefit لا أحد يستفيد
v- Don't Know لا ادري

33. Please indicate the functional areas required by your business (Please select all that apply).
الرجاء تحديد المستلزمات المطلوبة لنشاطك العملي في برامج الأعمال الإلكترونية (الرجاء اختيار كل ما ينطبق):

i- Electronic customer relationship management (ECRM)
ii- E-mail manager
iii- Financials and accounting
iv- Business intelligence (BI)
v- E-commerce (web shop)
vi- Document management
vii- Supply chain management (SCM)
viii- Enterprise resource planning (ERP)
ix- Human resources/payroll
x- Inventory management
xi- Marketing management
xii- Product lifecycle management (PLM)
xiii- Purchasing management
xiv- Quality management
xv- Sales force automation (SFA)
xvi- Sales order management
xvii- Transportation/freight management
xviii- Warehousing, logistics and distribution
xix- Workflow manager
xx- Other
xxi- Don't Know

THIS SECTION APPLIES ONLY FOR COMPANIES THAT HAVE AN E-BUSINESS INITIATIVE

هذا الجزء مخصص فقط للشركات التي بادرت او ستبادر بتطبيق برامج الاعمال الاكترونية.

34. Please use the following scale to answer the listed below questions: الرجاء إستخدام أحد المعايير التالية للإجابة على الأسئلة التالية:

5 very positive ايجابي جدا
4 fairly positive ايجابي
3 neither positive nor negative ليس ايجابي او سلبي
2 fairly negative سلبي
1 very negative سلبي جدا

Impact of the Internet or of e-business technologies in the company on… أثر الانترنت و الاعمال الالكترونية في الشركة على...		1 very negative	2	3	4	5 very positive
i-	the collaboration and the exchange of knowledge between employees التعاون وتبادل المعرفة بين الموظفين					
ii-	the availability of information for management and planning توفر المعلومات للادارة و التخطيط					
iii-	internal processing of commercial transactions معالجة النشاطات والحركات التجارية داخل الشركة					
iv-	product innovation الابداع في ادارة و طرح المنتجات و السلع					

35. Please use the following scale to answer the listed below questions:
الرجاء إستخدام أحد المعايير التالية للإجابة على الأسئلة التالية:

1 has changed significantly تغيرت بشكل ملحوظ
2 has changed somewhat تغيرت بشكل بسيط
3 has not changed لم تتغيير

		1 has changed significantly	2 has changed somewhat	3 has not changed
i-	Effect of e-business on the organizational structure of your company اثر برامج الاعمال الاكترونية على الهيكل الوظيفي الشركة			
ii-	Effect of e-business on internal work processes اثر برامج الاعمال الاكترونية على العمليات الداخلية			
iii-	Effect of e-business on customer relationship اثر برامج الاعمال الاكترونية على العلاقة مع الزبائن			
iv-	Effect of e-business on your company's offer of products and services اثر برامج الاعمال الاكترونية على عرض الشركة للسلع و الخدمات			
v-	Effect of e-business on the way the company operates today اثر برامج الاعمال الاكترونية على طريقة عمل الشركة الآن			
vi-	To what extent has e-business changed the way in which the company conducts business? الى اي حد غيرت برامج الاعمال الالكترونية الطريقة التي تقوم الشركة فيها بعملها؟			

A senior manager should answer this section of the questionnaire
يجب ان يجيب أحد مدراء الاقسام على هذا الجزء من الاستبيان.

36. Please use the following scale to answer the listed below questions:
الرجاء إستخدام أحد المعايير التالية للإجابة على الأسئلة التالية:

1 Strongly disagree أعارض بشدة
2 Disagree أعارض
3 Neither agree nor disagree لا أوافق و لا أعارض
4 Agree أوافق
5 Strongly agree أوافق بشدة

		1 Strongly disagree	2	3	4	5 Strongly agree
i-	The top manager in my company has a clear e-business vision. لمدير الشركة رؤيا واضحة لبرامج الأعمال الالكترونية					
ii-	Most people in my company understand the company's e-business vision. غالبية موظفي الشركة يتفهمون الرؤية المستقبلية لبرامج الأعمال الالكترونية					
iii-	I am confident that the top manager in my company believes in the need to change to e-business. أنا متأكد من أن الإدارة العليا تؤمن بالحاجة للتغيير بإتجاه برامج الأعمال الالكترونية					
iv-	It's OK to openly express a different opinion about how our company should be achieving its e-business vision. بالإمكان التعبير بحرية عن الطريقة التي يجب فيها على الشركة تحقيق رؤيتها لبرامج الاعمال الالكترونية					
v-	People in my company feel free to openly express their feelings when my company is introducing major changes. بإمكان الموظفين في الشركة التعبير بحرية عن احساسهم عندما تقوم الشركة بتطبيق تغييرات جوهرية في العمل					
vi-	I feel free to experiment with new ideas related to our e-business initiatives. اشعر بحرية بتجربة الأفكار الجديدة المتعلقة بمبادرة برامج الأعمال الالكترونية					
vii-	My company has assigned dedicated people to e-business initiatives on a full time basis. عينت الشركة موظفين متخصصين بدوام كامل لتطبيق برامج الأعمال الالكترونية					
viii-	Representatives from all major departments are part of the team involved with e-business changes. ممثلون عن جميع الأقسام المختلفة منخرطون في التغيرات الخاصة ببرامج الأعمال الالكترونية					
ix-	Representatives throughout the management hierarchy are part of the team involved with e-business changes. ممثلون عن المستويات الإدارية المختلفة يشاركون في التغييرات الناتجة عن تطبيق برامج الأعمال الالكترونية					
x-	Top management takes time to convince managers at every level that becoming an e-business is critical to my company's future success. الادارة العليا تأخذ الوقت الكافي لاقناع المدراء في جميع المستويات الادارية بأن تبني برامج الاعمال الالكترونية هو امر حساس و دقيق لنجاح الشركة					
xi-	Most first line supervisors in my company are committed to helping my company become an e-business. جميع المشرفين و العاملين في الميدان في الشركة ملتزمون بمساعدة الشركة لتطبيق برامج الأعمال الالكترونية					

xii-	The change to e-business in my company is being managed like a project with regular meetings, Milestones, and project management. يتم معاملة التغيير لبرامج الأعمال الالكترونية في الشركة على أنه مشروع بمواعيد ولقاءات					
xiii-	A project manager has been assigned on a full-time basis to manage the e-business change process. تم تعيين مدبير مشروع بوظيفة كاملة لادارة التغيير الناتج عن تطبيق برامج الأعمال الالكترونية					
xiv-	Training is an important part of management's plan to transform our company into an e-business. التدريب جزء مهم في خطة الادارة لتطبيق برامج الأعمال الالكترونية					
xv-	Our company's reward system matches our e-business vision and goals. نظام الحوافز في الشركة يتوافق مع رؤية تطبيق برامج الأعمال الالكترونية و أهدافها					